Investigation into the Motivation Strategies of the Elite ITU Triathlon Coaches

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Submitted in partial fulfillment of the requirements for the degree
Master of Arts in Applied Health Sciences
(Health & Physical Education)

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Abstract

The purpose of this study was to identify elite triathlon coaches' beliefs and practices as they pertain to motivating world-class triathletes. Semi-structured interviews were conducted with four elite triathlon coaches operating out of three different training groups. Furthermore, the athletes within these groups completed questionnaires assessing their motivational profiles, basic psychological needs, and perceived autonomy support. The interviews were analyzed deductively according to the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerland, 2003). The data revealed that coaches predominantly used an autonomy-supportive coaching style while also providing structure and involvement. The coaches emphasized an individualized approach for each athlete to best meet their needs. Athletes' responses to the questionnaires provide support for the coaches' philosophies and perceived behaviours. The findings of this study provide valuable direction for elite and developing coaches looking to enhance their communication skills in order to optimize athlete needs and motivation.

Acknowledgements

Based on my history and interests, I feel extremely fortunate to have conducted one of the most interesting master's projects imaginable. I would like to thank my supervisor Philip Sullivan for the direction, wisdom, and freedom to allow this process to be creative and enjoyable. Also, thank you to my committee Diane Mack and Tim Fletcher for the valuable insight on theory, design, and the qualitative process of this study.

I would like to thank Coach Taylor for taking the time to contact coaches on my behalf as well as teach me most everything I know about triathlon. I would also like to thank Coach Hinton and Coach Fox for their support and mentorship over the years. Thank you to the coaches and athletes who took the time to participate in the study. I have gained decades of experience through this process.

Thank you to friends and colleagues who have been there for me during this process.

Finally, a special thanks to my Dad who was my first and most influential coach! Thanks for the tough love. And to Glamoflauge (Mom) for being my biggest fan!

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Chapter 1: Introduction

On a cold dark wintery morning in January, professional triathletes across the northern hemisphere rise early in the morning for their first training session of the day - usually taking place at a calm and lifeless pool. No spectators or media are present, just a coach and possibly a few teammates. With the next major race not taking place for several months, these athletes enter the pool and glide through the water as they try and shake the fatigue out of their arms from the previous day of training. Over the next 90 minutes, the easy monotonous pace builds to the point of all-out exhaustion. They do this with one purpose in mind – to swim fast enough now to be ready to make lead pack in three months.

After breakfast, the day continues with 1.5 hours of cycling on a trainer. Not a hard session by design, but certainly not as enjoyable as cycling through country roads will be in a few months. By noon, the aerobic machinery within these athletes has burned close to 3000 calories, and yet they move about their day as if this physical abuse and calorie deprivation is completely normal. Their legs become accustomed to being in a constant fatigued state and feeling "good" becomes an entirely relative statement. After all, most of them don't know any other way of life. By late afternoon, the athletes again come together for a 3rd and final session of the day. This session will consist of 15 km of running at sub zero temperatures, often with gusting winds and snowfall.

This is an ordinary day in the life of a professional triathlete. A life defined by their ability to endure greater levels of pain for longer periods of time than their competitors. Olympic Gold (2000) and Silver (2008) medalist, Simon Whitfield shares his thought process in regards to his competitors while in a training camp:

> I've probably thought about Brownlee or [reigning ITU world champion Javier] Gomez or [reigning Olympic champion Jan] Frodeno every day I've been here [in Maui] in some form or another. Whether it's been on a climb, or sitting before my run, or at the pool when we're lining up for the next 50, I think about Brownlee, Gomez and Frodeno. I think about them every day in every workout—in everything. (Baird, n.d., p. 52)

Like many elite athletes, Simon Whitfield seems to use his competitors as motivation to get the best out of himself. However, Whitfield is also known for being relentlessly consumed by the process of preparation. With the multifaceted nature of human motivation, what are the most significant factors that motivate these athletes to continually push themselves to utter exhaustion in training and racing? Is it the pure joy they derive from hours spend swimming, biking, and running? Is it the feeling of self-worth they obtain from working for months and years towards a goal and then accomplishing it? Is it the fame, money, or expectation placed upon them by others that keep them motivated to train intensely day in and day out, often at the cost of a normal family and social life? This is a question that all professional athletes must answer for themselves at some point in their careers if they wish to fully understand the complexity of what drives them to such extremes on a daily basis.

Autobiographical Statement

Triathlon and endurance sports in general are something that I have been passionate about since I began running in my first year of high school. Running started as something I was good at and soon turned into an all consuming lifestyle that is more of an addiction than anything else - an addiction to go faster and further with each passing year. This drive is not uncommon among elite athletes. My journey as an elite runner has taken me around the world representing my university and country. It has allowed me to train and race with Canada's best runners and triathletes. During this time, I have also

been fortunate to learn from excellent coaches. A consistent attribute among these coaches was their ability to create a strong culture within the team. A culture that fosters hard work and success, one that doesn't accept excuses, but rather is positive, enthusiastic, and consistently raising the bar on what 'our' normal had to be in order to be great. This continual development of team culture, in which one athlete feeds off the success, motivation, and hard work of another in order to propel themselves even higher, has always fascinated me. Even in highly individual sports such as running or triathlon, it is uncommon for elite athletes to reach their potential when training solely by themselves. Therefore, I believe culture is something that a coach must develop within their team in order to achieve long-term greatness.

For these reasons, and with the intent of coaching elite triathletes as a professional career, I am very interested in how the coaches of the best triathletes in the world interact with their athletes. More specifically, I want to understand how the coaches' philosophies and behavior contribute to the motivational profiles of their athletes.

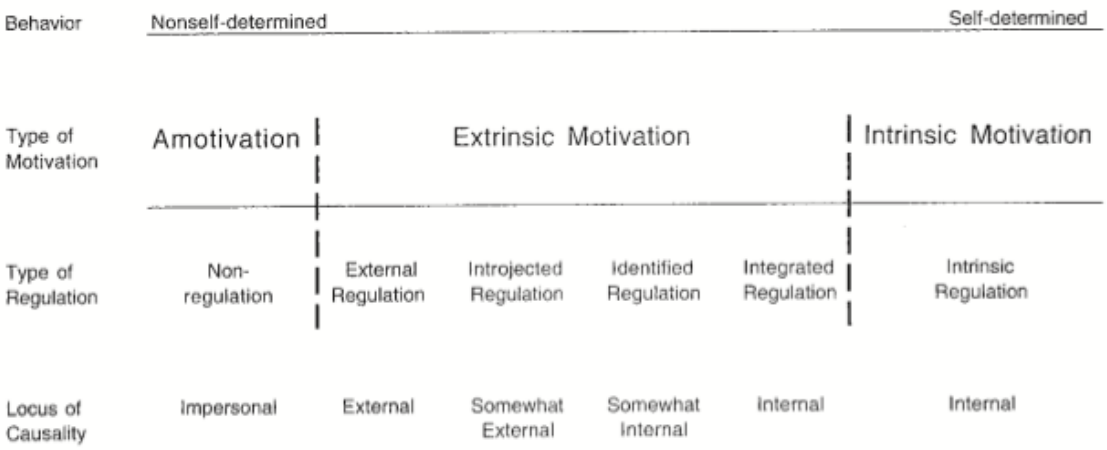
Currently, I coach age-group triathletes ranging from beginner to elite, two of whom will be competing at the world championships this year. I also have chosen to be my own coach as I continue to compete in triathlons. As a coach and athlete I have a strong desire to learn and experiment with various training strategies in order to further build me experiential knowledge base. I strongly believe that the experience of coaching others as well as myself will be invaluable as I transition to coaching other elite athletes. With each passing month I feel I have learned something I would not have had the opportunity to learn had I not been coaching myself. Yet, the value of learning from other coaches is also immeasurable and therefore studying elite triathlon coaches is a very high

priority of mine. The purpose of this paper therefore is to identify the beliefs and practices of a sample of the highly successful triathlon coaches as they pertain to motivating their athletes.

Theoretical framework

Deci and Ryan (1985b, 2000) proposed the Self-Determination Theory (SDT) to explain the effect of the social environment on human behaviour. The foundation of SDT is rooted in a few key principles. First, motivation is divided into two broad categories: autonomous (self-determined) and controlled (non-self-determined). Deci and Ryan (2008) also make it clear that it is the type of motivation rather than the amount that is most important in predicting success and satisfaction in an activity. However, it is important to note that the quantity of motivation is still relevant, specifically in the elite sport setting (Gillet, Vallerand, & Rosnet, 2009). Secondly, the assumption is made that people are inherently self-motivated and eager to achieve success; however, the drive within individuals can vary significantly due to factors within their social environment, which can ultimately distort their inherent motivation for success (Deci & Ryan, 2008). A third key principle is that in order for people to thrive in their environment, three basic and universal psychological needs must be met: autonomy, competence, and relatedness. Finally, motivation lies on a spectrum, beginning with the least desirable form – amotivation (non-self-determined) moving through to extrinsic motivation (non-self-determined or self-determined) and finally to the most desirable form - intrinsic motivation (self-determined) (see Figure 1-1).

Figure 1-1. Motivational Continuum According to the Self-Determination Theory (Ryan & Deci, 2000).



Forms of Motivation According to SDT

Motivation is the process that causes people to initiate a specific action or behave in a certain way. Motivational processes can stem from innate biological make-up and environmental factors (Deci & Ryan, 2008). SDT categorizes motivation into intrinsic motivation, extrinsic motivation, and amotivation.

Intrinsic motivation refers to engaging in an activity for the pure joy one obtains from participation (Deci & Ryan, 2008). In respect to triathlon, this could be reflected in the satisfaction obtained from the feeling of swimming, biking, and running. Furthermore, it could include the desire to push oneself to achieve new personal best performances and learn about new aspects of the sport.

Extrinsic motivation refers to engaging in an activity in order to obtain a benefit or avoid an undesirable outcome that is independent from the satisfaction obtained from the activity in and of itself (Deci & Ryan, 2008). Extrinsic motivation can fall into two broad categories: self-determined and non-self-determined. Self-determined extrinsic motivation is the result of an individual integrating the behavior into their value system and freely choosing to engage in the activity, as they believe it will lead to their desired

outcome (Deci & Ryan, 2000). For example, triathletes may choose to do hill sprints because they believe it will result in better performance on race day even though they may not particularly enjoy doing them. On a more global scale, athletes may choose to train daily towards a goal so that they have a sense of structure and purpose in their lives that benefits their overall well-being. Non-self-determined extrinsic motivation is the second sub-class of extrinsic motivation in which an individual engages in an activity to obtain rewards (e.g., financial, medals, peer recognition), to avoid the loss of something valued (e.g., sponsorships, fame), or to avoid feelings of guilt, disciplinary action of coaches, or disappointment from teammates (Deci & Ryan, 2000). This type of motivation stems from the feeling of being controlled by external forces as opposed to choosing to act based on enjoyment or self-enhancement.

The final form of motivation according to SDT is amotivation, which refers to the lack of desire to initiate a specific action. People that are amotivated do not value the required action/behavior and the link it has to a specific outcome. Furthermore, amotivated people may feel incompetent to perform the required behavior and therefore loose interest (Deci & Ryan, 2000).

SDT Mini-theories

SDT is a macro-theory consisting of 5 mini-theories designed to explain a specific component of motivation and behavior based on controlled and observational research. The first mini-theory, Cognitive Evaluation Theory (CET; Deci, 1975; Deci & Ryan, 1980), explains the effects of external sources (e.g., rewards, deadlines, feedback, pressures, etc.) on intrinsic motivation. More specifically, CET focuses on how these external sources modify competence and autonomy and therefore increase or decrease

intrinsic motivation.

The second mini-theory, Organismic Integration Theory (OIT; Ryan & Deci, 2002), describes the internalization continuum found within the extrinsic motivational framework. Furthermore, it is concerned with the effect the social environment has on the internalization process. The more internalized a behavior becomes, the more willing people are to engage in that behavior and thus autonomy is strengthened. OIT focuses specifically on the role of autonomy and relatedness in the internalization process, without neglecting the importance of competence.

The third mini-theory, Casualty Organization Theory (COT; Deci & Ryan, 1985a), aims to differentiate an individual's orientation towards a specific environment and the consequence it has on his/her behaviour. COT categorizes casualty orientations into autonomy (i.e., interest in activity at hand), controlled (i.e., focus on rewards and approval) and impersonal domains (i.e., lack of confidence in task).

The fourth mini-theory, Basic Psychological Needs Theory (BPNT; Deci & Ryan, 2000), states that there are three major psychological needs that must be satisfied in order for people to have optimal well-being. These needs are autonomy, competence, and relatedness. According to BPNT, when one or more of these needs are not met, intrinsic and self-determined extrinsic motivation are hindered, resulting in reduced well-being.

The fifth mini-theory, Goal Contents Theory (GCT; Deci & Ryan, 2000), examines intrinsic and extrinsic goals and the effect they have on well-being and motivation. GCT postulates that extrinsic goals (e.g., fame, money, appearance) do not satisfy one's basic needs and thus results in decreased well-being. In contrast, intrinsic goals (e.g., personal growth, close relationships, community involvement) enhance need

satisfaction and results in enhanced well-being. Furthermore, when goals are intrinsically oriented they are more likely to be sustainable than when they are extrinsically oriented.

Basic Psychological Needs

In order for people to thrive in their environment with optimal motivation, the SDT states that there are three psychological needs that must be met: autonomy, competence, and relatedness (Deci & Ryan, 2000). Furthermore, SDT states that these needs are consistent across cultures and that it is the way in which they are satisfied that may differ (Chirkov, Ryan, Kim, & Kaplan, 2003; Ryan et al., 1999; Sheldon et al., 2004). In the sporting environment, studies have shown that the satisfaction of the three basic psychological needs results in enhanced well-being, growth, and development on behalf of the athletes (Adie, Duda, & Ntoumanis, 2008; Gagne, Ryan, & Bargmann, 2003; Reinboth, Duda, & Ntoumanis, 2004).

Autonomy is satisfied when an individual is able to choose his or her own path and act accordingly (Deci & Ryan, 2000). This does not mean that the individual must act independently or formulate the original idea of how things should be conducted. *Choosing* to follow the advice of a trusted mentor, teacher, coach, friend, etc. also satisfies the need for autonomy (Mageau & Vallerand, 2003). Competence is satisfied when an individual feels confident and able to complete the task at hand in their environment (Deci & Ryan, 2002). Finally, relatedness refers to the feeling of being connected with others and thus having a sense of belonging to one's environment (Deci & Ryan, 2000).

Context: Is the Self-determination Theory Relevant for Elite Athletes?

From the SDT theory, the assumption could be made that higher levels of intrinsic motivation will produce the best performances. However, the SDT and its classifications of motivation originated from research on college psychology students given external rewards (e.g., money or praise) for completing a puzzle that was used as a task that the students would be intrinsically motivated to do (Deci, 1971). Since then, SDT has continued to evolve and be tested in various settings: education, work, parenting, patient care, exercise, athletics, and personal relationships (Deci & Ryan, 2008).

The important distinction to be made is that elite athletes often have more invested in their sport and approach it with a greater intensity and dedication than most students in their school work, recreational athletes in their sport, and employees in their jobs. This is of course a generalization; there are students, employees, parents, and educators that approach their work with immense dedication and intensity. However, the majority of participants in SDT research over the past 40 years has been conducted on the "average" student, employee, parent, etc., in which conclusions were drawn from (Deci & Ryan, 2008).

Therefore, although the SDT provides a solid foundation upon which we can view the motivational process of human activity, including professional athletes, the context of the situation must be taken into account when extrapolating laboratory findings to a very specific group of individuals in the real world, in which several variables are at play (Mallet & Hanrahan, 2004). Furthermore, the motivating factors for elite athletes differs from that of recreational athletes in that elite athletes have opportunities for external motivation that are not present to recreational athletes (e.g., money and fame) (LaChausse, 2006).

Not only does elite athletes' motivation differ significantly from recreational athletes (Fortier, Vallerand, Briere, & Provencher, 1995), but it also varies amongst other elite athletes in the same sport. Mallet and Hanrahan, (2004) found that the top 10 Australian finishers at the Olympics or World Championships in track and field reported a wide range of motivating factors, which included: improving their personal best (n = 10), building relationships (n = 6), beating opponents (n = 5), receiving recognition (n = 3), enjoyment of training (n = 3), making money (n = 2), among others.

Alistair Brownlee (2012 Triathlon Olympic Gold medalist) speaks of the differences of himself and his younger brother Jonathan (2012 Triathlon Olympic bronze medalist and 2012 World Champion):

> I wonder if our personalities have developed in opposition to each other. The big difference is that while triathlon is what I love doing – there is literally nothing in the world I would rather do – I've never got that impression with Jonny. He does it, and he does it brilliantly; but the motivation I get from pure enjoyment is something he doesn't share. He is motivated by an obsession for doing everything right, and on time, and by the book. He has to be on time for sessions because that is what motivates him to do it, not because he desperately wants to do things… He does enjoy the sport, but just as powerful is the feeling that he has a duty towards it, a sense that he should do it. (Brownlee & Brownlee, 2013, p.33)

Thus according to the Brownlee brother example (and research that will be reviewed in the following section), it is not necessarily the highest level of intrinsic motivation that is important, but rather finding the specific factors that drives oneself to produce these world leading performances. In other words, it is important to examine all aspects of what an athlete considers to be important in their lives and acknowledge that athletes may use their sport to enhance other aspects of their lives as opposed to doing it solely for its own sake. A hypothetical example would be when an athlete has a gift in a certain sport and therefore trains very hard to further develop their skills and produce

phenomenal performances in the process, despite not being intrinsically motivated to do it. Their motivation is derived from gaining recognition and making a good living for themselves and their families - which may be two things that they personally enjoy and find intrinsically motivating. The point being that we cannot necessarily assume that the highest levels of intrinsic motivation will equal the best performances.

Elite Athletes' Performance and Their Corresponding Motivational Profiles

Enhancing athletes' self-determined motivation through autonomy-supportive coaching/teaching has been well established (Deci & Ryan, 2008; Mageau & Vallerand, 2003), however, does this translate into better performance? There are a limited number of studies examining this critically important question.

In national level French Judokas, 101 athletes were surveyed one to two hours before competition on their perceived autonomy support from their coach, as well as intrinsic motivation, extrinsic motivation, and amotivation at the contextual level (i.e., motivation towards their sport) and situational level (i.e., motivation during a specific workout or competition) (Gillet, Vallerand, Amoura, & Baldes, 2010). Perceived coach autonomy support was significantly correlated with athletes' self-determined motivation at the contextual level. Contextual self-determined motivation had a significant positive association with situational self-determination. Most importantly, situational self-determination had a significant positive influence on performance. However, neither contextual self-determined motivation nor perceived coach autonomy support had an effect on performance. Thus, when athletes have high self-determined motivation regarding the upcoming competition, they perform better. The variance explained in

performance by the situational self-determination displayed by the athletes accounted for 5% of overall performance.

In two separate studies (Gillet, Vallerand, & Rosnet, 2009), French junior elite tennis players (n = 170) and fencers (n = 250) were surveyed on their motivational profiles using the Sports Motivation Scale and had their subsequent performance correlated to the motivational cluster they fell within, while controlling for their past performance. Motivational clusters were determined using a two-stage cluster analysis based on the participants' responses from the French version of the Sports Motivation Scale. In study 1, four clusters emerged. Cluster 1 consisted of 18% of the sample and was labeled as "high autonomous-high controlled" cluster. Cluster 2 consisted of 41% of the sample and was labeled as "moderate autonomous-low controlled" cluster. The third cluster consisted of 28% of the sample and was labeled as "high autonomous-moderate controlled" cluster. The fourth cluster consisted of 13% of the participants and was labeled as "moderate autonomous-high controlled" cluster. Similar classifications were used for study 2, except three clusters had formed instead of four. Interestingly, neither study revealed a cluster that was characterized by high autonomous-low controlled motivation, which would be the truest form of self-determined motivation according to the SDT. This may be the result of the extremely competitive environments that are inherent in all sporting context today. It is simply no longer possible to dissociate the activity from the outcome. In line with the SDT, the tennis cluster with the least amount of self-determined motivation (moderate autonomous – high controlled motivation) had the worst performance compared with the other groups. This equates to 11 – 12% more loses throughout the season. Similar results were found with the fencing study in that the

least self-determined clusters had the worst performance. However, in contrast to what the SDT would predict, the clusters characterized by high levels of controlled motivation when paired with high levels of autonomous motivation in the fencing study had the highest level of performance. These results support Chantal, Guay, Dobreva-Martinova, and Vallerand (1996) who found that the performance of 98 elite Bulgarian athletes was positively associated with non-self-determined extrinsic motivation and amotivation.

Amabile (1993) had found that within a work setting, performance is optimal when intrinsic motivation levels and certain forms of extrinsic motivation are both high, however not necessarily at the same time. Amabile states that intrinsic and extrinsic motivation act synergistically to produce optimal work output. As an example, she suggests:

> Some scientists report great excitement during the idea-generation and initial working-out stages of the process *(intrinsic motivation).* However, their motivation sometimes flags if difficulties are encountered during the slow and tedious process of working out the fine details to fully develop, validate, and clearly communicate the idea… Some extrinsic motivators, such as clear deadlines or the promise of extrinsic rewards and recognition, may do no harm at these stages (since flexible, creative thinking is no longer the dominant mode); indeed, these motivators, as long as they leave the sense of self-determination intact, should serve to keep the individual engaged in the work. (Amabile, 1993, p.196)

Although this example is not sport specific, there are similarities that exist between this example and the long and difficult process of building towards an athletic goal. In regards to triathlon, the ability to push oneself to endure extremely high amounts of pain is a large determining factor for success. There will certainly be times when athletes must draw upon external motivation, particularly rewards and recognition, to get themselves through it. The point being, that although swimming, biking, and running may be intrinsically motivating for elite athletes, doing it to the point of collapse often is not.

The Role of the Coach in Athlete Motivation

Most professional triathletes do not train alone, but rather have a support network consisting of family, teammates, physical therapists, and coaches. The combination of these people will have a strong influence on an athlete's thoughts, beliefs, and athletic goals. In particular, athletes are in almost daily contact with their coaches and rely heavily on them for guidance and support (Blanchard, Amiot, Perreault, Vallerand, & Provencher, 2009; Jowett & Cockerill, 2003). After years of training as a professional, it is not that athletes are incapable of writing their own training schedules, but rather they look to their coach and teammates as a source of motivation to push themselves just a little bit harder than they could push themselves individually.

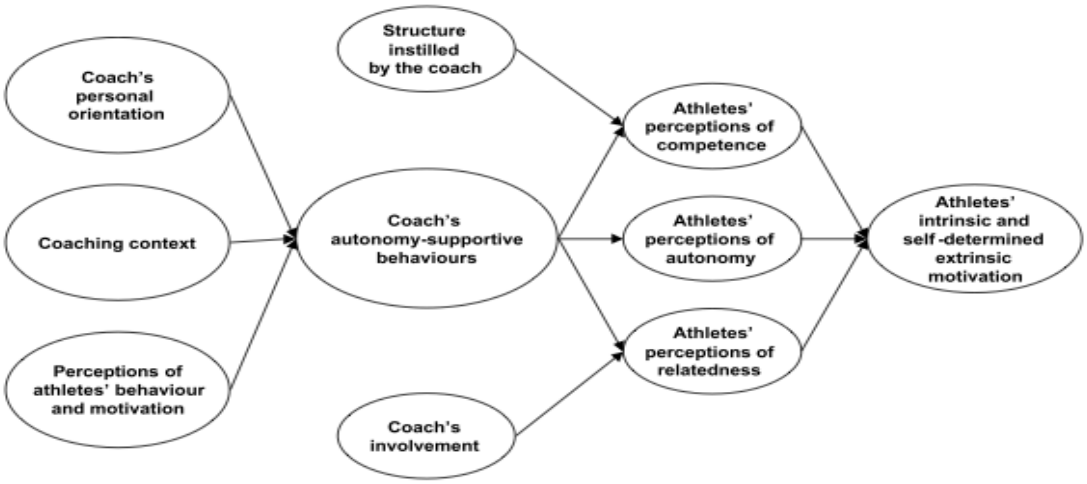
Due to the independent nature of triathlon and the freedom athletes have in choosing their own coaches, the location they train, and their teammates, it has become common practice for athletes to make the decision to leave a coach to work with a new coach. There is no contract binding an athlete to a coach or team as there is in other professional sports (e.g., hockey, basketball, etc.). Therefore, it is imperative that coaches develop a strong relationship with their athletes and cater not only to their physical needs, but also their psychological needs. Thus by doing this they will create an environment that allows their athletes to thrive and choose to remain within the training group as opposed to looking elsewhere to meet their needs.

The Coach-Athlete Motivational Model

If intrinsic motivation, self-determined extrinsic motivation, and certain forms of non-self-determined extrinsic motivation are key to an athlete's success, then what role does the coach play in strengthening these forms of motivation and preventing the

undesirable forms of non-self-determined motivation, or worse amotivation? Mageau and Vallerand (2003) propose a motivational model that focuses on coaching behavior and its subsequent effect on athlete motivation (see Figure 1-2).

Figure 1-2. The Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003).



Mageau and Vallerand suggest that a coach must allow their athletes to feel autonomous, while also providing structure and involvement. For an athlete to feel autonomous, the coach must provide them with opportunities for decision-making and initiative taking, while taking the athlete's perspective into account and minimizing pressure and control over the athlete (Mageau & Vallerand, 2003). In essence, the coach-athlete relationship should be more of a democracy rather than a dictatorship; the coach facilitates the athlete to make choices that will best advance his/her performance and overall character. As will be discussed below, this model is the culmination of several studies examining structure, autonomy, or involvement independently or in some cases two of the three behaviours together. However, a study by Klem and Connell (2004), did

examine all three of the behaviours and found that when elementary students perceived their teachers to provide structure, autonomy, and involvement they were 89% more likely to be engaged in school compared with teachers that lacked structure, autonomy support and involvement.

Autonomy-supportive coaching lends itself particularly well to coaching professional triathletes for several reasons. First, triathlon is an individual sport, even though many athletes train within a group. Previous research on individual sports including judo (Gillet, Vallerand, Amoura, & Baldes, 2010), tennis and fencing (Gillet, et al. 2009), and track and field (Mallet, 2005) has found positive influences of autonomy-supportive coaching on performance. Furthermore, in regards to Paralympic athletes, perceived coach autonomy support was a significant predictor of athletes' perceptions of autonomy and relatedness (Banack, Sabiston, & Bloom, 2011). Similarly, perceived coach autonomy support among Mexican athletes (Lopez-Walle, Balaguer, Castillo, & Tristan, 2012), Spanish soccer players (Balaguer, et al., 2012), high school and college athletes (Amorose & Anderson-Butcher, 2007) predicted satisfaction of autonomy, competence, and relatedness. This suggests that autonomy support is a unique coaching behavior in that it is able to fulfill all three basic needs. Second, athletes respond differently to training loads, group interactions, race pressures etc. and therefore some degree of individualization is key to get the best out of each athlete. Third, professional triathletes' income depends on their results and since they (or their sponsor) are typically paying the coach, the athlete should have a significant input in how things are run. Fourth, professional triathletes can leave their coach at anytime and find another coach. This is in contrast to a professional team sports in which players are under contract with a

team and can only leave when they are a free agent or traded by the team. Finally, the majority of professional triathletes know themselves quite well and what type of workouts/environment they respond best to and therefore should convey this to the coach. Malcolm Brown, coach of the Brownlee brothers (2012 Triathlon Olympic and World Champions) and Non Stanford (2013 Triathlon World Champion) had this to say when asked if his relationship with his athletes changes over time in such a way that the athletes begin to take more control:

> That is my ambition with all athletes. I want to impart to them the knowledge that I've got and ultimately for them to be responsible for their own performance – and want to be! I want us to reach a point where we are having conversations about training rather than setting the direction in training for them. Coaches don't do themselves any favours by thinking they can direct athletes all the time… Teaching young people to be honest about their success and failure and to take responsibility for themselves is important. I sometimes do this by asking them questions I know the answer to but get them to think about it, it discourages athletes from being too dependent on their coach. (Coventry Godiva Harriers, n.d., p. 5)

However, providing autonomy support without structure and involvement will not fully meet an athlete's need for the other two basic psychological needs: competence and relatedness (Mageau & Vallerand, 2003). Without structure and involvement, autonomy-supportive coaching could appear as lackadaisical by simply allowing athletes to make all the decisions and to figure things out for themselves (Mageau & Vallerand, 2003). With the addition of structure, athletes must act within a specific framework designed by the coach to guide them to optimal performance and self-growth. This framework can include rules, limits, organization, and behaviours that athletes are expected to uphold. For example, providing structure along with autonomy support at the elite level could include giving an athlete a range of mileage they feel is best for them to run as opposed to asking them how many miles they would like to run (no structure) or giving them an exact

number of miles they must run (too much structure/control). According to Mageau and Vallerand's (2003) Motivational Model of the Coach-Athlete Relationship (Figure 1-2) structure instilled by the coach has a direct effect on an athlete's perception of competence and consequently an athlete's intrinsic motivation and self-determined extrinsic motivation. Studies conducted in the education setting support the need for structure in fulfilling the need for competence: Jang, Reeve, and Deci (2010) found that autonomy support and structure provided by teachers were positively correlated; furthermore they both independently predicted students' behavioural engagement. Similarly, Vansteenkiste et al., (2012) found that the combination of teachers' autonomy support and structure resulted in students with enhanced learning strategies and less behavioural problems.

The final component of the Motivational Model of the Coach-Athlete Relationship is involvement. A coach's involvement fulfills an athlete's need for relatedness. An involved coach is one who maintains regular contact with their athletes and provides individual feedback, encouragement, and instruction. Furthermore, involved coaches go beyond the realm of sport and support other aspects of their athletes' lives. In a study involving young gymnasts, coaches that were perceived to be highly involved in their athletes' training, resulted in the gymnasts having higher levels of self-esteem compared with uninvolved coaches (Gagne, Ryan, & Bargmann, 2003).

Previous research, including The Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003) places a heavier emphasis on autonomy-supportive behaviours compared with structure and involvement. Therefore, it is important that future coaching research examines the specific behaviours that comprise

structure and involvement (Amorose & Anderson Butcher, 2007). However, I believe there are a few reasons that autonomy support has occupied the majority of the research. First, according to the model, as well as previous research (Amorose & Anderson-Butcher, 2007; Balaguer, et al., 2012; Lopez-Walle, et al., 2012) autonomy-supportive coaching/teaching behaviours have the ability to satisfy all three basic psychological needs, whereas structure is often limited to fulfilling the need for competence and involvement the need for relatedness (Mageau & Vallerand, 2003). In addition, when examining the impact of physical education teachers' and parents' autonomy support, involvement, and modeling on students' self-determined motivation towards leisure-time physical activity, autonomy support accounted for 13% of student motivation, whereas involvement, and modeling each accounted for 7% (McDavid, Cox, & Amorose, 2012). Deci (2010) measured the structure and autonomy support provided by high school teachers as well as the student's classroom engagement. Engagement was measured either objectively by trained observers or subjectively as student self-report. Structure and autonomy support both independently predicted student engagement when measured objectively by trained professionals, however, only autonomy support predicted self-reported (subjective) student engagement. Therefore, based on the limited previous research, it is logical to focus most heavily on the variable that will have the greatest impact across all three needs. Further support is provided by Deci and Ryan (2000) who state:

> Individuals can engage in a variety of goal-directed behaviors in an attempt to attain competence and relatedness, behaviors that could be either controlled or autonomous. For example, an athlete might work relentlessly to become more competent than others, or a fraternity member might behave in accord with social norms to feel related to the group. In both of these cases, the behaviors could be either autonomous or controlled. That is, the athlete could feel competent whether

> the practicing was autonomous or controlled, and the fraternity member could feel related to the group whether or not the regulatory basis of the member's relational behavior was self-determined. Thus, autonomy occupies a unique position in the set of three needs: being able to satisfy the needs for competence and relatedness may be enough for controlled behavior, but being able to satisfy the need for autonomy is essential for the goal-directed behavior to be self-determined and for many of the optimal outcomes associated with self-determination to accrue. (p. 242)

Second, from a historical perspective a commonly accepted role of a coach has been to provide structure for the athletes and to play an active-involved role on a daily basis. In contrast, having an autonomy-supportive coaching style is a relatively newer phenomenon in coaching, which is quite different from the dictatorship styles of the past, especially in team sports. Third, the seven tenets of autonomy-supportive coaching that Mageau and Vallerand (2003) propose contain elements of structure and involvement. For example, tenet one "Provide choice within specific rules and limits" contains autonomy "Provide choice" but also structure "within specific rules and limits." Also, tenet 3 "Acknowledge the other person's feelings and perspectives" requires a significant degree of involvement to recognize and then acknowledge an athlete's feelings and perspectives. Thus it can be difficult to look at everything in 'black' and 'white' from a terminology perspective when there is a large degree of overlap in the words we use and the information obtained. Finally, from a researcher's perspective, studying autonomy is intriguing in the sense that there is a valid opposition – control. Although "control" may sound negative, if the coach/teacher is the one instituting control and he/she has extensive experience, knowledge, and success, then leading in this way could have beneficial outcomes. In contrast, the opposite of structure is chaos, while the opposite of involvement is detachment. Providing the coach is not overly structured or involved, it is intuitive that a chaotic and detached environment will not be conducive to athlete

motivation and performance.

Mageau and Vallerand (2003) propose seven autonomy-supportive coaching behaviours in their Motivational Model of the Coach-Athlete Relationship that enhance athletes' three basic psychological needs and in turn athletes' intrinsic and self-determined motivation.

1. Providing choice within specific rules and limits

By providing athletes with choice throughout their training and competition, they will be required to take ownership in the decisions being made and will therefore be more likely to follow through with the necessary behavior. In an education setting, physical education classes that provided students with choices regarding the activities they were able to participate in resulted in greater intrinsic motivation compared with classes in which the teacher decided upon the activities (Goudas, Biddle, Fox, & Underwood, 1995).

In an elite sport setting, Clifford Mallet, sports psychologist, researcher, and coach of the 4 x100 m and 4 x 400 m Australian track relay teams at the 2004 Athens Olympics provided his relay members with choice in a number of ways, he states, "… decisions on training content, training times, training venues, and uniforms for training and competition were all negotiated." (Mallet, 2005, p. 422). Mallet also allowed the team to decide the order in which the athletes would run each leg of the Men's 4 x 400 m relay in the Olympic final, which resulted in a silver medal and the season's best performance. Mallet provides this rationale:

> [I] outlined the pros and cons of two preferred running orders, after which the athletes were given 15 minutes to discuss then decide upon their preference for the running order. It was imperative that the athletes were provided with the necessary information about the possible options available to make a meaningful decision. That

> process was important in shifting the responsibility back to the athletes thus promoting the perception of choice (self-determination)… It was crucial that the athletes had some autonomy in the decision because under those conditions, they were more likely to commit to their decision rather than to a decision imposed upon them. (Mallet, 2005, p. 422)

In this example, it is clear that Mallet not only gave his athletes choice in how they would execute their next performance, but he gave that choice within specific limits (e.g., giving them two preferred orders to choose from). Furthermore, he provided them with a rational on choosing those orders, which leads into the next point on autonomy-supportive coaching.

2. Provide a rationale for tasks and limits

Providing a rationale for tasks and limits is crucial for the internalization process necessary for athletes to increase their self-determined motivation. When an individual understands why they are doing something and why it is beneficial, they are much more likely to integrate and endorse the behavior. For example, Becker (2009) interviewed a group of 18 elite athletes who competed in the NCAA (Division 1), national and/or international levels from a variety of sports on their experiences of great coaching. When it came to the ways in which great coaches communicate, one athlete said "We knew exactly what coach wanted us to do in terms of getting better, improving, and helping the team" (p. 108). Another athlete added that great coaches wanted "things to be done in a particular way for a reason" (p. 108). Becker commented:

> [Coaches] provided explanations for what they asked the athletes to do (e.g., *why* they were conducting a particular drill or *why* a certain individual might not play). Taking the time to explain *why* was an important aspect of communication that made these coaches great. (Becker, 2009, p. 108)

3. Acknowledging the other person's feeling and perspective

It is important for coaches to acknowledge their athlete's feelings since it is the athlete that must do the grueling training and racing day in and day out. Athletes that are unhappy with the way things are being run will not perform optimally. Furthermore, the coach must consider the athlete's needs and goals both in sport and outside of sport, as this will dictate the direction and involvement of the coach-athlete relationship.

In the elite sport setting, Steve Harrison - a professional soccer coach in England that has an excellent record and reputation as an expert coach - was interviewed regarding his coaching style (Jones, Armour, & Potrac, 2003). Harrison puts it this way "I learnt not to fall out with players because if you do, they won't play for you. The biggest thing about players is that they play for you, not clubs." (p. 221) It is interesting to note that this statement demonstrates how a certain degree of non-self-determined extrinsic motivation can play a valuable role in the motivational profile of an elite player. Harrison goes on to say, "You need to treat people like adults, that's the bottom line; the days of scrapping with players are over." (p. 221) Harrison's coaching philosophy ultimately revolved around communicating with his athletes in an empathetic way.

4. Providing athletes with initiative taking and independent work

Although a major role of a coach is to support their athletes, providing too much support or control, especially when it is unneeded, can weaken the athlete by inhibiting their creativity and initiative (Amabile, 1997; Bartholomew, Ntoumanis, & Thogersen-Ntoumani, 2009). In an exercise setting, Brawley and Vallerand (1985) looked at the differences in college students intrinsic motivation levels following four sessions of fitness classes with either an autonomy-supportive fitness leader (i.e., allowing choice and initiative) or a controlling leader (i.e., telling the students what, when, and how to do

the exercises). The students led by the autonomy-supportive instructor demonstrated higher levels of intrinsic motivation and desire to continue the program compared with the students led by the controlling instructor.

Anson Dorrance is the former head coach of USA's 1991 Women's World Cup Championship soccer team and the current head coach of the University of North Carolina women's soccer team, where he has won 21 NCAA titles. When Dorrance was asked about the psychological principles he thought were the most valuable, he stated:

> … The players that truly want to be great have to have the self-discipline to train on their own and drive themselves on their own. So this quality is very important for the players if they want to improve each year. (Wang & Straub, 2012, p. 436)

From this response, it is clear that Dorrance promotes the idea that athletes take initiative and work hard independently. Through the process of independent work, athletes are able to learn things for themselves, which enhances their feeling of competence.

5. Providing non-controlling competence feedback

Competence is also enhanced when a coach provides positive feedback in a non-controlling way. Essentially, positive feedback can be delivered in an informational or controlling manner. For example, positive feedback that has an informational aspect in relation to teaching swimming could be, "The weights you have been lifting seemed to have really strengthen your kick." Statements such as this enhance competence and subsequently intrinsic motivation (Mageau &Vallerand, 2003). In contrast, positive feedback that has a controlling aspect could be stated as, "Make sure to keep lifting weights; your kick has improved, but I want it to be even stronger for the next race." When the feedback is provided in this manner it can undermine intrinsic motivation by

inferring the coaches expectations of their athlete's behavior (Mageau & Vallerand, 2003). Finally, the positive feedback must not be given too often or given when undeserved, as it will then loose its value.

In the elite sport setting, Pete Carroll, former head football coach of the University of Southern California and winner of two National titles and coach of three Heisman trophy winners in four years takes this approach connecting with his players and providing feedback:

> …after the first year of coaching here, I realized that I was so focused and directed on results that I left some guys out on the periphery, and I felt bad about these relationships. I realized that I hadn't connected with those individuals, and so I changed my style and direction a bit to make sure that I now touch base with every player. I take that as my personal responsibility, and I extend that challenge to the other coaches as well. You have to find a way to make each team member feel that his contribution and value is necessary and needed. Then his life becomes a little more upbeat, his attitude more positive, his compliance with the rules more voluntary… We use both positive and negative reinforcement, but generally we are much more effective when we are positive and when we communicate with them, support them, and *solve the mystery* of what motivates them. (Voight & Carroll, 2006, p. 327)

6. <u>Avoid controlling behavior</u>

Coaches that seek to control the actions of their athletes risk undermining their autonomy and ultimately their intrinsic motivation (Bartholomew et al., 2009; Ryan, 1982). Coaches that use controlling behaviours pressure their athlete to think or act in a specific way (Deci & Ryan, 1985). Controlling behaviours can take the form of: removal of resources or privileges for not acting in a certain way, guilt-induced statements, tangible rewards, and shifting the focus from task-orientation to ego-orientation (Mageau & Vallerand, 2003). It should be noted that not all forms of control are bad; there are times when removing privileges for inappropriate behavior, or providing tangible rewards (e.g., prize money) for elite athletes needing to make a living are important in the

continual development of the athlete. The problem arises when coaches provide excessive control over their athletes in such a manner that the athlete feels they are continually acting against their desired behavior in order to maintain a certain status.

An example of the detrimental effects of exerting too much control was shown through a self-analysis by Dr. Jim Denison and his previous coaching habits. Dr. Denison is currently at the University of Alberta and Director of the Canadian Athletics Coaching Centre. The following quote is a reflection on his cross country coaching at a U.S university in 1992 and his explanation for why one of his top runners (Brian) performed poorly at the conference championships:

> Certainly, I determined Brian's training timetable that specified the time of day he ran morning, afternoon or both - as well as the intensities of his runs and their duration. Associated with this was the amount of time I gave Brian to recover from his workouts, the interval between repetitions he did on the track, and the number of "easy" days I allowed him between his "hard" days. The variables of intensity, recovery and volume are vital to long distance running and create a range of temporal constraints and possibilities for the coach to consider. They are intended to help an athlete develop the discipline and fitness required to push through pain and discomfort and reach new levels of preparedness. But by controlling the temporal nature of Brian's running, was I also influencing how running was felt and experienced by him? Did my precision as a coach, that prevented any idle or useless movements, in effect remove Brian from the process or act of "being a runner"? Was it this imposition of discipline that contributed to his lack of effort, his giving up, that I observed during his race? It was precisely this process of turning an active body into an inert body through a structured sport program that led Halas and Hanson to label coaches as "agents of normalization" (p. 123)… Contrary to what I initially thought when I diagnosed his poor performance as him psyching out, therefore, the resulting intervention or application of social theory in a case like Brian's would not require him to adjust his motivation or improve his mental skills. Rather, it would require that I assume more responsibility by considering, for example, the possible unintended consequences that my everyday, taken-for-granted coaching practices like the use of a stopwatch might be producing (e.g., turning Brian into a docile subject) and then modifying them and my own actions and behaviours accordingly. In this way, it can be said that an important contribution social theory can make to the practice of coaching is to help coaches begin to cultivate a new sense of themselves that would effectively challenge them to problematise how they develop and apply their knowledge of coaching so that no aspect of their

> coaching, including what they might have previously believed to be unquestionable coaching techniques, became a taken-for-granted practice. (Denison, 2007, p. 74)

In essence Denison is suggesting that by imposing too much control, a runner will loose their drive for the sport, just as an artist would lack creativity, or a teacher would lack initiative when too much control is placed on his/her. Densison suggests that rather than controlling every aspect of their training, it is the coach's role to provide choice within reason that ultimately allows the runner to choose their own course of action.

7. Prevent ego-involvement in athletes

Due to the extremely competitive nature of professional sports, athletes have a tendency to focus on their competitors and base their own level of competence on how they fair against them. This type of approach is termed ego-involvement on behalf of the athlete (Pensgaard & Roberts, 2002). In contrast, an athlete that takes a task-orientated approach focuses on improving their skill and performance based on self-referenced standards (Pensgaard & Roberts, 2002). For example, when an athlete runs a race and sets a personal best time, but finishes 5th in the process, a task-oriented athlete would be happy with the improvements he/she had made from their last race and not be concerned with the fact that 4 others had run faster, since that was out of his/her control. However, an ego-oriented athlete would be dissatisfied with finishing 5th, had his/her goal been to win the race, despite running a personal best time. Furthermore, studies have shown that when people are ego-oriented their levels of intrinsic motivation decreases, due to the fact that they begin to focus heavily on the outcome and less on the process of doing the little things necessary to achieve the desired outcome (Beauchamp, Halliwell, Fournier, & Koestner, 1996; Duda, Chi, Newton, Walling & Catley, 1995).

World-class athletes have a tendency to compare themselves to other athletes (Mallet & Hanrahan, 2004); therefore one of the roles of the coach is to bring their athletes' attention back to focusing on the process. Daren Smith, coach of the women's Triathlon Olympic Silver and 4th place finishers at the 2012 games, and arguably the most successful ITU women's triathlon coach in history, has this to say about focusing on the process:

> The "rah, rah" coach at the start of the race, before the start of the race says, "I want you to win this," and da, da, da. Well, I never talk to my athletes about winning - never. I would never go, "All right, we need a top five or a top 10″ or anything like that. I'll tell you what I do instead: We work hard at all the things that make them good before the race. We have a plan. What makes somebody go slower in a race? Thinking about the other athletes. What happens if you know you should run with your arms at a certain height or run at a certain cadence or take a drink at a certain time, what happens if you forget all that and you dream about or you think about other things that are distracting? You slow down. So you've got to focus on the things that make you run fast, which is, what are your arms doing? Are you breathing well? What are you thinking or what are you saying to yourself? You know, are you running heel-toe, or are you running mid-foot or whatever technical thing the coach has said in training? Are you drinking appropriately? So, my point is, we don't think about things like winning, we don't think about things like coming in at a certain place. We think about the things that make us go fast. If five people beat you [in a race], then you come sixth, right? Now, did you have a chance to affect how they performed? No. Of course not. That's the answer. So we get people to focus on what they can do. Don't focus on what you can't do or can't control, which is other people. And even if you got fifth in a race or sixth in a race, and you performed all the things you'd been training to do, do you think you'd be proud? Yes, you would because you performed well, which is doing things well in training and then doing exactly what you were taught to do in the racing environment. So that's basically my philosophy on teaching people how to compete. (Triathlon Europe, 2013, "On How to Compete," para. 1).

However, it is not always an easy task to have athletes focus solely on themselves rather than competition. This is partially due to coaches focusing on the outcome rather than the process, but much of if it is due to societal pressures that emphasize winning and competition at the elite level – there are no medals for trying your best or setting a

personal best time. A fine example of this is found with Michael Phelps, who is renowned for his hatred of losing – a very ego-oriented mentality, yet he is arguably the greatest Olympic athlete ever. This suggests that even if his intrinsic motivation decreases, as SDT would predict, he may compensate for this loss by adding "fuel to the fire" in an extrinsic motivational thought process - avoid losing at all costs. Leading up to the 2012 Olympic games, Phelps's became so preoccupied with beating his longtime rival Ryan Lochte, that his coach, Bob Bowman said "They are so focused on racing each other that they do stuff like tonight and not take it out fast... They do the cat and mouse, and in the process of that, they forget to swim fast." (Drehs, 2012, para. 17). Bowman was worried that if Phelps and Lochte focused to intensely on each other in the Olympic trials, that they would not be prepared to swim fast in the Olympic games when the competition was even tougher. As it turned out, Phelps and Lochte combined for 11 medals at the 2012 Olympic games, 6 of which were gold.

Considering the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003) as whole, it is clear that there are elite coaches embracing this model and currently using certain aspects of it in their own coaching practices (e.g., Malcolm Brown, Darren Smith, Clifford Mallet, Pete Carroll, Anson Dorrance). However, in contrast, elite athletes' behavior is not always in accordance with the Motivational Model of the Coach-Athlete Relationship (Chantal, Guay, Dobreva-Martinova, & Vallerand, 1996; Pensgaard & Roberts, 2002). Athletes' motivation can be fueled by extrinsic factors (e.g., money, fame, peer approval), while simultaneously having an 'ego' rather than 'task' oriented thought process when training and competing. Therefore, future research needs to investigate the connection between elite coaches' perception of their

behaviour towards motivating their athletes and the actual self-reported motivational state of their athletes.

Purpose

The overall purpose of this research is to identify the beliefs and practices of a sample of highly successful ITU triathlon coaches as they pertain to motivating their athletes. More specifically, this research seeks to determine (a) if these coaches' beliefs and practices reflect the model proposed by Mageau and Vallerand (2003) and (b) how their athletes' perceptions and motivational profiles relate to it. Although there have been qualitative studies examining elite athletes' perceptions of their coach's behavior (Becker, 2009; Côté & Sedgwick, 2003; Mallet & Hanrahan, 2004; Pensgaard & Roberts, 2002; Philippe & Seiler, 2006), as well as qualitative studies examining the coaching styles of world-class coaches (Abraham, Collins, & Martindale, 2006; Bloom, Schinke, & Salmela, 1997; Côté & Sedgwick, 2003; Jones et al., 2003; Potrac et al., 2002; Voight & Carroll, 2006; Wang & Straub, 2012), there has yet to be a qualitative study looking specifically at motivational styles of world-class coaches.

In regards to research on the level of athlete development, there has been research with high school, college, and junior athletes to determine the effect of autonomy-supportive coaching and its effect on motivational profiles (Amorose & Anderson-Butcher, 2007; Hollembeak & Amorose, 2005) and performance (Gillet et al., 2010). Furthermore, Pensgaard and Roberts (2002) conducted a qualitative and quantitative study with elite athletes on motivational climate. However, there are few studies that use perspectives of coaches and their athletes to understand coaches' philosophies and perceived behaviours. By incorporating the athlete questionnaires in this study it will

provide a more complete picture of the effectiveness of the coaches' beliefs and perceived behaviours as it pertains to their athletes' motivation. In the larger context, it is vital to understand the practices of highly successful coaches in order to compare their coaching styles with theoretical coaching models such as Mageau and Vallerand's (2003) motivational mode. This research will provide support or suggest modification to Mageau and Vallerand's widely used model in coaching education. Finally, the publication of this research is important for developing coaches to learn from the practices of highly successful coaches.

Research Questions

Two overall research questions shaped the design of this study. The first question is of primary importance for this study. The second question's purpose is to support or contrast the data obtained in answering the first question.

1. How and to what extent are the coaching beliefs and practices of highly successful ITU triathlon coaches aligned with the Motivational Model of The Coach-Athlete Relationship (Mageau & Vallerand, 2003)? If differences arise, what other strategies are these coaches using?
2. To what extent are athletes' motivational profiles and perceptions of their coaches' behavior reflective of the coaches' philosophy on how best to motivate their athletes? For example, if Coach A believes strongly in autonomy-support with his/her athletes, do their athletes respond with a high level of intrinsic and self-determined extrinsic motivation?

Chapter 2: Methods

This study used a qualitative approach with quantitative support in order to gain a more complete picture than could be obtained by using solely a qualitative or quantitative approach. The goal of mixed methods is to draw upon the strengths and minimize the weaknesses of qualitative and quantitative research and thus incorporate them both into one study (Johnson & Onwuegbuzie, 2004). Furthermore, although this study is focused on the coaches, it was a personal interest of mine to see the responses of the athletes to gain a better understanding of their mental state so that I am better equipped when coaching elite athletes in the future. The qualitative component was comprised of semi-structured interviews with elite triathlon coaches. The purpose of using qualitative interviews was to gain deeper and richer information on the motivational techniques of the most successful triathlon coaches in the world than would be possible through using, for example, a survey. The quantitative component consisted of three surveys given to the coaches' athletes to identify their perception of their coach's autonomy support, as well as their own motivational profiles. A mixed method approach, which incorporates the perspectives of coaches and their athletes, was used to the credibility and trustworthiness of claims to be made in the thesis. Yet, a mixed methods approach has its limitations due to the difficulty in interpreting conflicting results, analyzing qualitative and quantitative data concurrently, and the issues arising from mixing paradigms. However, the strengths of mixed methods outweighed the weaknesses for this study in that it allowed the quantitative data obtained from the athletes to be used to support and/or contrast the coaches' statements. Thus I had greater insight into the coach-athlete relationship and stronger conclusion could be drawn (Johnson & Onwuegbuzie, 2004).

Participants

The goal of this research was to explore the beliefs and practices of the most successful ITU triathlon coaches in the world. In this study, success as a coach is defined by the performance of their athletes. Thus my intention was to interview the coaches who are currently coaching the top ranked ITU triathletes in the world. Typically, these coaches work with a small group of professional triathletes in what is known as a 'squad' or 'crew' typically made up of 10 - 15 participants, including both males and females. The coaches and their squads often live and train in the same cities and travel together frequently for races and training camps. As a result of the close and constant contact coaches and athletes have with one another strong relationships often develop.

The coaches were selected based on the following criteria, used by Côté and Sedgwick (2003). Each coach had: at least 10 years of experience, previously developed world-class triathletes, and is currently working with professional athletes on the World Triathlon Series (WTS) circuit. The athletes surveyed must have raced at least one WTS race in 2012, 2013, or 2014.

Four coaches from three training groups agreed to participate in the study. These coaches are spread across the world and ranged in age from 40 - 60 years old. Each of the coaches has coached Olympic and/or World Championship medalists ranging from U-23 to the senior ranks. They were contacted directly by the head of Triathlon Canada and one of Triathlon Canada's national coaches with whom I have previously worked with. The coaches that showed interest in participating in the study were sent a letter of invitation via email, which asked if they would be willing to be interviewed for this research. Following the interviews, the athletes were contacted by their coaches and

asked to fill out the three surveys and forward them directly to me. A total of six athletes completed and returned the questionnaires. These athletes met the inclusion criteria in that they had all raced on the ITU circuit at least once between 2012 – 2014.

Prior to administering the interviews with elite coaches, a pilot interview was conducted with a local track coach in his early 60s who works with elite high school and club athletes. The purpose of the pilot interview was to increase the likelihood that the interview questions made sense to the participants and for me to practice using probes and follow-up questions. Following the pilot interview, I asked the coach if there were any questions he would modify to enhance clarity and he felt the questions were clear and concise. The coaches' identity has remained anonymous in the data analysis, as they were given pseudonyms.

Instrumentation

Semi-structured interviews: Semi-structured interviews are often used as a qualitative approach to data collection for sport and exercise psychology research (Côté, Salmela, Baria, & Russell, 1993). The value of using semi-structured interviews is in the freedom and depth the coaches will have in answering the open-ended questions (Horn, 2008, p. 38), while at the same time ensuring that the research questions will be addressed. Furthermore, Schwandt (2007), states that the interview process is "a means of gaining access to an interviewee's experience" (p. 162). In order to develop great coaches, it is key that young coaches have an opportunity to learn from the experiences of the greatest coaches in the sport (Bloom, Durand-Bush, Schinke, & Salmela, 1998). For the current study, my preference was to conduct the interview in person with the coach. My rationale for wanting to do face-to-face interviews was to assist in developing

rapport, which is important for trustworthiness and credibility (Shenton, 2004). I was able to conduct three of the four interviews in person, and one of the coaches requested using a video-medium (Skype). For the in person interviews I traveled to a group in the southern United States and another group in Europe. Having trained in elite groups previously, I was well positioned to conduct these interviews and direct the questions based on the coaches' responses to ensure the most important details were flushed out. Therefore, the value of "researcher as instrument" was a key facet in conducting and analyzing the data. In regards to analyzing the data I was able to decipher through the rhetoric and decide upon which statements were most relevant for the context of this study.

The interview questions were sent to each coach a few days prior to the interview. One coach had requested to see the questions prior to the interview and therefore out of respect for his time and willingness to participate, there was no reason to not agree with his request. By allowing the coaches to see the interview questions beforehand, it allowed them to put forethought into their answers, which should result in responses that are aligned with their true coaching beliefs. The interviews were conducted in a conversational manner, which allowed me to probe for specific detail and ask follow-up questions as needed to encourage the participants to reflect on and think critically about their responses (Ennis & Chen, 2012). By structuring the interviews in a conversational manner, I was able to draw upon my lived experience as a coach and elite athlete to obtain what I felt would be the richest information possible and that would also satisfy the ways in which I could address the research question. The conversational, semi-structured approach stands in contrast to a highly structured interview, in which the same

questions are given in the same order and does not allow for probes or follow-up questions (Ennis & Chen, 2012).

My preference to not use Skype for the interview was due to the impersonal nature of communication and the feeling that some aspects will be lost by not experiencing it first hand. Although the one Skype interview went well, it was conducted in a more formal manner and lacked some of the insight I received from the other coaches and the experience of seeing them interact with their groups at practice. Additionally, it is more difficult to make a connection, read body language, and has the risk of technical difficulties.

The semi-structured interviews (see Appendix A) lasted approximately 1hr and consisted of questions that have been self-developed to explore each of the seven tenets of autonomy-supportive coaching, as well as structure and involvement. Potential probes and follow-up questions had also been included in the interview guide.

Table 2-1. Sample Questions from the Interview Guide

Tenet	**Sample question**
Provide choice within specific rules and limits	Would you consider yourself an autocratic coach or democratic coach? Why? Can you give some examples of how you are autocratic/democratic?
Provide a rationale for tasks and limits	How important do you feel it is to explain to athletes why they are doing certain workouts? How often will you do this?
Acknowledge the other person's feelings and perspectives	How often do you discuss with your athletes how they are feeling about: Energy levels and recovery from workouts?
Provide athletes with opportunities for initiative taking and independent work	How do you feel when an athlete comes to you with a new training idea they want to implement?
Provide non-controlling competence feedback	In regards to providing feedback, how regularly do you give such things as: Praise? Positive feedback? Constructive criticism? Negative feedback (pointing out their mistakes)?

Avoid controlling behaviours	Do you ever try to control an athletes behaviour (in training or outside of training) knowing that it's for their own good (i.e., to enhance performance)? Can you give an example?
Prevent ego-involvement with athletes	With so many elite athletes training together, do you focus more on an athlete's self-improvement or allow competition within the group, or both? What is the value in taking this approach?
Structure	How do you deal with an athlete who continually exceeds the prescribed pace time?
Involvement	What type of relationship do you have with your athletes? How involved are you in their lives outside of training?

Essentially these questions addressed the autonomy support, structure, and involvement aspects of the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003).

Questionnaires: The following three surveys were given to the athletes via their coach to complete and were sent directly from the athletes to myself:

1. To measure perceived autonomy support by the coaches, the athletes completed the short form of The Sport Climate Questionnaire (SCQ), developed by Deci (2001). The SCQ consists of six items scored on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree), with higher scores indicating a more autonomy-supportive coaching style. A sample item evaluating coaches' autonomy support from the SCQ is, "I feel that my coach provides me choices and options." Internal reliability values of Cronbach alpha have been reported at 0.81 (Brickell, Chatzisarantis, & Pretty, 2006).

2. To measure the basic psychological needs the athletes feel toward their sport and the environment they train in, The Basic Needs Satisfaction in Sports Scale was used (Ng, Lonsdale, & Hodge, 2011). This scale consists of twenty items accessing competence (sample item: "I can overcome challenges in my sport "); choice (sample

item: “In my sport, I get opportunities to make choices”); internal perceived locus of causality (sample item: “In my sport, I feel I am pursuing goals that are my own”); volition (sample item: “I feel I participate in my sport willingly”); and relatedness (sample item: “In my sport, I feel close to other people”). The items will are scored on a 7-point Likert scale ranging from 1 (not true at all) to 7 (very true). Ng et al. (2011) examined 401 athletes in a variety of sports to measure the reliability of the five-factor scale. Alpha coefficients for the five-factors were: competence = .77, autonomy-choice = .82, autonomy-IPLOC = .76, autonomy-volition = .61, relatedness = .77.

3. To measure the overall motivational profile of the athletes under the SDT framework, the Sports Motivation Scale – II (SMS-II), developed by Pelletier et al. (2013) was used. The SMS – II is a revised version of the original SMS (Pelletier, 1995), which more accurately reflects the SDT theoretical framework. The new questionnaire consists of 18 items scored on a Likert scale ranging from 1 (does not correspond at all) to 7 (corresponds exactly). The SMS-II measures intrinsic motivation (sample item: “Because it gives me pleasure to learn more about my sport”); extrinsic integrated motivation (sample item: “Because practicing sports reflects the essence of whom I am”); extrinsic identified motivation (sample item: “Because I have chosen this sport as a way to develop myself”); extrinsic introjected regulation (sample item: “Because I would feel bad about myself if I did not take the time to do it”); extrinsic external motivation (sample item: “Because people I care about would be upset with me if I didn’t); amotivation (sample item: “I used to have good reasons for doing sports, but now I am asking myself if I should continue”). The validity and reliability of the SMS-II has been supported by Pelletier, et al. (2013), in which two studies were conducted. Study 1

examined 412 adult athletes in a variety of sports and the reliability for each subscale was calculated using Cronbach alpha. SMS-II yielded an α ranging from 0.70 to 0.88.

Observation: By observing the coaches in practice, I was able to gain insight into their actual coaching behaviours and use that as a means of adding trustworthiness to what they had said in their interviews (Marshall & Rossman, 1995). The observation in this study was quite informal and I acted as a bystander while the coaches conducted practice. I was able to observe a total of four sessions between two of the groups. However, I was also able to observe the coaches communicate with the athletes outside of practice. The role of coach-athlete communication was crucial in the data analysis as this served as one of the major environmental supports in facilitating athlete motivation.

Data Analysis

Qualitative: The interviews were fully transcribed and returned to the coaches to check for accuracy and to attend to "member checking". Member checking is an important step in establishing credibility and involves having the coaches read the transcripts and my interpretations of their thoughts to ensure they are accurately represented in the study findings (Miles & Huberman, 1994). One of the coaches made slight modifications to the transcript; the other three coaches did not. Once participants had been given the opportunity to clarify the transcripts of interview data, I analyzed the interview data in two steps. First, the interviews were coded and analyzed deductively according to the seven tenets of autonomy-supportive coaching, with the addition of structure and involvement, which corresponds to the groupings of questions in the interview guide. That is, I searched through the interview data for quotes, excerpts, and examples which I felt represented the respective tenets of the theory. Using direct quotes

from the interviews with coaches, the intention was to create a picture which could be used understand the extent of their coaching style to be in accordance with the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003). In the second step I re-read the transcripts using an inductive approach. Specifically, I analyzed the data searching for quotes, excerpts or examples that did not fit within autonomy support structure, and involvement according to the Motivational Model of the Coach-Athlete Relationship. The purpose of this step in the analysis was to determine if a new construct could potentially be added or changed within the model or if new and unexpected insights were present in the data.

Quantitative: Each survey was scored according to its directions and the results were compared with the answers given by the coaches in the interviews. This was done as a means to address/use triangulation, which "seeks convergence, corroboration, or correspondence of results from multiple [or mixed] methods" (Greene, 2007, p. 100). In seeking to triangulate the two types of data, the depth of the findings will be more complete as information will be obtained from both sides of the Coach-Athlete relationship. This will enhance the consistency of the data, but also uncover discrepancies between the coaches' intended behavior and the athletes' thoughts and feelings.

Trustworthiness

With this being predominantly a qualitative study, it is important to establish trustworthiness in the data analysis to demonstrate that the findings are accurate. This is in contrast to quantitative research, which uses validity and reliability to demonstrate consistency and accuracy of the results. Reliability, which refers to the reproducibility of the research is important in providing detailed descriptions of the study design, however

the results of a qualitative study will not always be reproducible in the sense that the research participants' and the researcher's beliefs and philosophies change over time and thus the data obtained will reflect these changes. Validity, which refers to the means of measurement being accurate in what it intends to measure, is also not widely used in qualitative research due to its subjective nature and the involvement of a researcher in the research process (Golafshani, 2003). Guba (1981) has proposed four criteria to establish trustworthiness for qualitative research, these include: credibility, transferability, dependability, and conformability. Shenton (2004) has provided several strategies to ensure these four criteria are met.

Credibility refers to the study's internal consistency, which ensures that the study explores what it intended to explore. Steps that were taken to ensure credibility include: developing a strong knowledge base of the culture in which the participants are apart of, which has been build through my own athletic experience, as well as interacting with elite coaches, and extensive reading about the coaches and athletes through books and other web based material; spending as much time as possible with the groups to gain a better understanding of their environment and the coach-athlete interaction; transcribing the interviews and returning them to the interviewee for member checking; frequent debriefing sessions with my supervisors to ensure the study is planned and implemented to the best of my ability; and triangulation of methods to build the case studies.

Transferability refers to the study's external consistency, which is the ability to relate the findings of one study to other contexts. Due to the fact that this study is being conducted in a very specific context, it is important that thick description of the phenomenon is conveyed to ensure the context is well understood by the reader. It is not

the intention of this study to infer transferability of this data to other contexts; however, I am obliged to write in a way that readers can use their own judgment and experiences to apply the findings to their own context.

Dependability refers to the study's reliability, which states that if another researcher using the same methods repeated the study, the results would be similar. The most important step to ensure dependability is the inclusion of an interview guide and validated questionnaires. Furthermore, the theoretical framework in which the data has been compared with has been clearly explained. However, as mentioned previously, my background as an elite triathlete will affect the manner in which the interviews were conducted and data analyzed. Therefore, the dependability of the study will vary depending on the researcher's background.

Conformability refers to the ability of the researcher to remain as objective as possible in the study design and data analysis, as well as acknowledge the bias they hold. Therefore, it is important that all methodological decisions are clearly explained and findings are supported by quotes and questionnaire results.

Researcher Bias

There are two specific biases that I bring to this study that must be acknowledged. First, I am a competitive triathlete and I will be competing in races this year. I have also trained with a Canadian Olympic triathlon develop group in 2011. Therefore, I have a unique insight into the demands and pressures athletes feel in this type of environment. Secondly, I currently coach age-group athletes (non-professional) that are preparing for the World Triathlon Championships this year. Thus I have experience, albeit limited, with the strategies coaches use to motivate their athletes. These biases have influenced how I

structured the interview questions, as well as influenced how the interviews were conducted and analyzed. Because I have an intimate knowledge and lived experiences of the topic and many of the perspectives of both sets of participants, I bring many preconceptions and personal preferences to this study. This could influence how I analyze and interpret the data. However, the strength of this approach is that I was able to ask questions that are specific to the demands of the sport and I am also closely associated with the lifestyles of the participants. An argument could be made that a researcher who conducts this research without similar experiences to the participants could misinterpret their perspectives. However, there also remains a weakness of this approach, being that I may infer or "map" meaning to the coaches' responses based on my own experience.

Ethical Considerations

The Brock University Ethics Board has approved this research project in September of 2013. Coaches and athletes will be asked to sign and submit a letter of informed consent. To protect participants' identities and information, coaches were given pseudo names and athletes' data was grouped according to their coach thus the athletes were unnamed. Coaches and athletes will be informed that their participation is voluntary and that they are able to withdraw at any time.

Chapter 3: Results and Discussion

The overall purpose of this study was to identify elite triathlon coaches' beliefs and practices as they pertain to motivating world-class triathletes. Four coaches operating out of three different training groups were interviewed for this study. These coaches are highly established in the ITU and currently and/or previously have coached Olympic and/or World championship medalists. The results chapter will be divided into two sections. First, the coaches' responses to the interview questions will be analyzed based upon the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003). Second, the athletes' responses to the questionnaires will be reported as evidence to support or contrast the coaches' statements.

Part 1: Coaches' Responses

The interview guide was developed to examine the congruency between the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003) and the actual coaching beliefs and behaviours of these elite triathlon coaches. This chapter will be organized in such that each feature of the model will be examined in relation to the coaches' responses.

Autonomy Support, Structure, and Involvement

The interview guide was designed to investigate these elements of the coaches' beliefs and behaviours and how they affect their athletes' basic needs and ultimately motivational profiles. As mentioned previously, the majority of the focus was on the seven tenets of the model.

<u>Provide choice within specific rules and limits</u>

Each coach provided varying levels of choice depending on the athletes' individual needs. None of the coaches believed that a dictatorial style of coaching was of value for the type of athletes they were coaching. However, it is important to keep in mind the context these coaches are operating. Coach Maddox, who has extensive experience with athletes at varying levels of their development said:

> I definitely am more of a democratic coach rather than a slave-driver coach. I sometimes consider it more of a weakness. But I also have had these interim years where I've worked with amateurs and age groupers and adults and older adults where there's a lot of negotiation going on versus the elites, and I coached school kids for 12 years where they're not questioning a lot of what I do but I'm not giving them a lot of choice either. But there is forethought. (Maddox)

Maddox is essentially stating that the degree of choice depends on the athletes' level of experience and therefore their ability to make good choices. The common trend among the coaches is that choice is provided within structure. In this sense structure does not take the form of control, which in previous research has been a point of concern (Jang et al., 2010). When asked about the degree of choice, Coach Franklin stated:

> Yeah a degree of choice. I thought about that one. I probably have a self-selecting group, but then again many coaches do. Athletes have chosen to work with you and there's a degree of belief and trust from the outset. But do I provide choice? Not a lot really. There are different environments but when I'm in camp here I set the schedule of the basic program and practice times, a lot of that is set. But within the workouts, within the sessions there is a degree of autonomy that we strive for and that's how to do the session on a given day. That's going to be where that comes in, is how they decide to do a particular workout. Obviously some are very specific, you know we're trying to achieve certain objectives… So an example today, we did a building set of hundreds in the pool, and I say based on how you feel today you can decide how much you want to build here, and the pace times, here's roughly what we're aiming for. And then you have some autonomy within that to hit those times or to hit the effort and then see what times you get. So yeah there is some autonomy within a structure. Part of the job of the coach is to organize and provide that direction, the guidance of what we're trying to achieve... I want them to have input and feel like they're able to guide the direction of their program and career in what's important to them. So there is some autonomy there. And again I want them to have input in that and take ownership of what they're doing [in reference to their race schedule]. So I guess it's a balance between ownership and a level of autonomy and me providing the

guidance and the direction that they're after. (Franklin)

Among all coaches, the key areas in which choice was allocated included: race schedule, pace times within a range during a workout, and general structure of their schedules. The degree of choice provided is similar to what Mallet provided his athletes while acting as the head coach of the Australian Olympic relay teams (Mallet, 2005). Coach Jackson stated that the more trust and belief his athletes had in his coaching abilities, the less control the athletes needed in the process. The general sense I received by observing three of the four coaches, as well as the way in which each answered questions during the interview regarding choice was that their athletes have a high level of respect for them and therefore they were invested in the process and were not questioning the way in which things were run. Therefore coaches used choice purposefully to accomplish two things: provide the athlete with a sense of ownership in the process, and develop the independent decision making skills needed in competition, training, as well life outside of sport.

Provide a rationale for tasks and limits

Providing a rationale for tasks and limits was an important part of each of these coaches' philosophy. However, there were differences between coaches in regards to the aspects of performance and development they emphasized when providing a rationale. For example, in regards to proving a rationale to their athletes underlying the physiological reasons for completing a training session, Maddox said:

> And so the basic premise has always been from the beginning for me is if you don't understand why we're doing the workout you don't have to do the workout… It was interesting; I was listening to an interview on NPR the day before yesterday morning to Missy Franklin's coach. She was the London women's coach. And she was saying that she really feels, and I completely resonated with it, really feels that if an athlete has an acute understanding of the exact physiological and neurological reason for their process that you achieve

> much greater buy-in and much greater contribution from the athlete when they know what they're aiming at. And I've had this with sessions, especially with the advent of these new sessions, the potassium pump sessions and the V02 kinetic sessions, that they're very uncomfortable for the athletes. But as soon as you explain to them in depth, you explain what the purpose of that workout is and you take examples out of their world: you want to run 2:55 km pace for 10K this is what you need to do to achieve that. And then they come around. So yes absolutely. And I feel I have been accused of taking too much time over that. (Maddox)

In contrast, Franklin did not take much time to explain workouts, as he did not feel it was necessary based on the experience and knowledge of the athletes he is working with. Franklin states:

> How often do I explain? Again my context is probably pretty unique, but not very often. Mostly it's probably because we spend so much time together and they're quite astute in the way I run the sessions and they know what it is we're trying to achieve. So they generally don't ask. Sometimes I do explain – "we're going to run some K's and the objective is race pace, threshold work. The rest is X and we're going to shoot for Y." That's it. I normally don't get questions, why are we doing this? And it might be again that the group I have are experienced and they've done the types of sessions that you do – or maybe some of them just don't ask and get on with it. But it doesn't happen in my context very often. Certainly if they did I would feel that it would be important that they know why we're doing what we're doing and what we're trying to achieve, because things can go wrong. If you're doing a long set and they overdo and don't pace themselves well. But often the session is self-explanatory and we have the principles such as we want to finish what we're doing well and therefore we pace it well. But again, it doesn't happen that often in my context. (Franklin)

The other two coaches responded in between these two extremes. Coach Jackson stated that he rarely discusses the physiology but rather goes quite in depth to explaining the demands of the races and how their training will require specific practices to prepare them for the competition. Thus he is emphasizing real-world application as opposed to theoretical physiology.

In a more general sense, Coach Jackson and Coach Hudson spoke quite frequently about having the athletes in their programs understand and share certain core values. This was an element these coaches believed was foundational in developing and optimizing

the culture within their groups. Hudson said:

> I'm pretty straight with them. I guess one of the core things we do from the very start is you talk about values, this goes way back to the start of coming into one of my programs, and one of the values is the expectation that every day they will bring 100% of what they've got to the table. And if 100% of what they've got isn't good enough for achieving the outcomes then we'll modify that. If they don't bring 100% then it's almost an unacceptable part of being in the program. And I think that as a group they hold themselves accountable across their peer group. I'll address someone whose not putting in a full effort. But I'm pretty clear, if someone is not putting in then not only are they done for the day they know that they run the risk of losing my belief in them pretty quickly. So it is a pretty black and white approach to effort as far as bringing 100% of however much or however little they've got. But they're certainly conditioned and the culture in the group is that there is no other way to do it. (Hudson)

Making new athletes aware of the core values of the group and having them buy into these values decreases the rationale needed for general tasks and expected behaviour; the younger athletes simply learn from the behavior of the senior athletes – this is the element of osmosis that Coach Jackson speaks of:

> So having senior athletes in my group that I've worked with for a long period of time, it probably takes out the coaching direction I have to impose upon others and they can pick things up through osmosis, which is the most powerful coaching tool. Osmosis is always a lot more effective than dictation. (Jackson)

<u>Acknowledge the other person's feelings and perspectives:</u>

Each of the coaches made a priority of acknowledge their athletes' feelings and perspectives. On a basic level, they each used some form of computerized training log that their athletes were to report their daily energy levels, mood, training progress, and so on. The coaches would see the athletes' daily reports and follow up with them when needed – especially when they sensed any red flags. Along with this information, reading the athletes' body language was used to gauge recovery and modify their training load accordingly:

> I think they [athletes] know that it is the first thing [training log] that I check and it's the first mechanism to me to decide whether I need to make an intervention

> and change the plan or continue the plan. So in the process I'll read them. If there's something I'm worried about in the short term I'll pick up the phone straight away and call them before the session. If not, I'm already starting to form an idea in my head where I need to modify something and then I'll meet them on deck or wherever the session is and speak to them and then make a decision. Now we might modify training, stick to training, send them home. And then obviously during the day it's the same process so they will train, I'll see the session, that observation to me is key. But again once they finish the session we actually give them 15 minutes to upload data, to make some comments, once the dust has settled and they feel they can write something formally. And that process continues during the day. So it's probably a cumbersome process and it's certainly not a fail-safe process but as far as mitigating the risk of missing something I think it goes a long way to make sure that we're on top of that. So whether it's energy levels or recovery or whatever, we're getting a snapshot 3 or 4 times a day, either from face to face, backed up by phone. (Hudson)

Interestingly, each of the coaches went beyond simply acknowledging their athletes' feelings and perspectives by providing the athletes with perspective to their situation and context. By doing this, they not only show the athlete that they are aware of their current state, but they help the athlete see the situation in a more positive light and facilitate them to make the best decision possible. Coach Maddox and Hudson exemplify this behaviour:

> …that's basically my job, so a lot of times I'm trying to broaden their horizon by saying "alright it's not going really well right now, but have you considered…? You lost your mom… this happened… you had this… you had that… you had the other... So and so has been going through a good patch and you tend to relate yourself to so and so and they're going really well right now… and you've got low iron count so you don't feel so good." So I'll do a lot of that. (Maddox)

> I very rarely give advice; I just recount some of the experiences that I've had - whether it's personal or from other athletes. I'll say, "I've seen athletes here in the same situations and this is how they handled it." A lot of that I think for the athletes is about recognizing that they're not alone. It's not something that you link to them. I'll say, "I've had five athletes who've mentioned exactly the same thing" and all of a sudden they're like "oh really?" And that's where the coaching experience comes into play because you can always pull out multiple scenarios. There's very little that comes up which is new. So very quickly the more opportunities, the more experiences you can pull up to illustrate a similar case – even without giving an answer. Often it's not an answer you're giving it's just that the athletes all of a sudden don't feel isolated. They're not alone. So I try to stay out of a person's life but also acknowledging that sometimes I am the closest

> significant person who they trust, and they know my interest is doing the best for them and they rely on me. (Hudson)

By using examples and experience to broaden the athletes' perspective of the situation it allows the athletes to make their own decisions and understand why they are making them, which will result in the ability to make better decisions in the future.

Provide the athletes with opportunities for initiative taking and independent work

Although triathlon is an independent sport, much of the training time is spent together as a group. Therefore, there is not a lot of independent work occurring during sessions. However, each of the coaches felt that it was important for the athletes to be independent in a more general sense in order to make their own decisions and take initiative when necessary. Specifically, Coach Jackson often creates scenarios in sessions to train the athletes' ability to make decisions they will face in competition:

> So we play villain and victim scenarios all the time where I'll either create a scenario verbally or physically – this may be with the motorbike or riding, and just throw things at them [not literally… I hope]… So those scenarios often are there to create thinking and experience, an experiential learning opportunity not to create physical hard work. [As an example] we might do 100 meters and go "oops, some one false started, lets get back to the start again." Or such things as swimming open water and we'll have an aqua pacer on and it'll be beeping every 30 seconds. And every 30 seconds in that two-minute effort, they have to just stop. They have to stall, they have to imagine they've been punched in the nose and what are the processes that they will invest in after they've been punched in the nose. So you create this stop 'BANG- oh shit'. Okay let's just pause, I need to think, play-pause, play-pause, play... So I create lots of play that's pause-play pause-play. (Jackson)

In regards to enhancing self-perception, Maddox discussed a strategy he uses to help athletes become more confident and obtain the self-belief they need to compete at the highest level:

> I think what leads to an athlete's success on the highest level is a series of very subtle progressions. They figure out they can fit into a certain size shoe and then they grow into that shoe. And then they figure out they can fit into a bigger shoe and then they

grow into that shoe. I work on a concept called 'being', that an athlete has to be who they need to be to be able to achieve what they are physically capable of. If you're not being the person that achieves what you're physically capable of you're not going to achieve that. So I spent a lot of time working on who you're being as opposed to what are you doing. But there's a lot of time and work that needs to go under the bridge and a lot of that work is just those baby steps of every day just trying on the Batman suit. Can I be Batman? Let me put on his boots. Tomorrow let me put on his tights, and the next day you put on his cape. (Maddox)

Studies involving hockey, football, and baseball players have supported this concept, in that higher levels of self-confidence and self-efficacy benefit performance (Feltz & Lirgg, 1998; George, 1994; Meyers, Feltz, & Short, 2004). Furthermore, a study with experienced weight lifters found that past performance strongly predicted future performance under experimental deceptive conditions (Fitzsimmons, Landers, Thomas, & van der Mars, 1991). Athletes that were led to believe they had lifted more than they had actually lifted in their previous lift were able to lift more in subsequent lifts. This is in contrast to lifters that were told the truth or that they lifted less than they had. Previous performance accounted for nearly all of the variance in future lifts. This is in accordance with Coach Maddox's concept of 'being' in that an athlete must believe they are capable of a physical feat before they can accomplish it.

Provide non-controlling competence feedback

Providing feedback was a key element of these coaches' behaviour in order to get the most productive behaviour out of the athletes. Without consistent feedback, athletes lack the direction needed to invest their energy in the best possible way. Due to the context these coaches are operating, there expectations were extremely high for their athletes. Therefore, constructive criticism was the most common form of feedback. By using this form of feedback, the coaches are providing information on how the athlete can improve and therefore enhancing their perception of competence. Praise was used

sparingly and with intent, such as when an athlete was developing a new skill, had achieved a major goal, or used as a lead-in to delivering constructive criticism. Furthermore, the need for praise was highly individualized; an important skill of an elite coach is to recognize this need and provide the appropriate amount. From my observations of the four coaches, Coach Maddox gave the most praise, as he believed that triathlon is voluntary for these athletes and not always pleasant – thus necessitating the need to provide more praise than in a situation that is fully enjoyable. However, he cautioned that coaches should not overuse praise, especially when it is inauthentic, as it will diminish their credibility with the athletes. This belief is supported by Hollembeak and Amorose (2005), in which they found positive feedback from the coach to negatively affect perceived competence by the athlete. However, other research has found positive effects of positive feedback on perceived competence (Amorose & Horn, 2000, 2001; Whitehead & Corbin, 1991). Hollembeak and Amorose (2005), suggest that athletes may have perceived the feedback to be too frequent or as a sign that the coach did not truly believe they were competent in their sport. Coach Hudson supported this view in that feedback needs to be honest in order to gain the respect of his athletes:

> I'm known to be brutally honest, both in the positive and negative. The athletes know that whatever feedback they get comes with no agenda, no emotion and no judgment. It's just exactly based on how it was performed, based on how they are capable of performing. And so they've become very used to and they seem to respond very well to that honesty. To me it's a no brainer; I don't see why people would do it differently. (Hudson)

In addition to being honest with their athletes, sharing a passion with the athletes for competing at the highest levels was also an important component to develop trust. This is crucial because the coaches felt that once a trusting relationship was established, the athletes would be more receptive to constructive criticism. Coach Jackson has an

interesting approach when using feedback to develop new skills:

> I try and create a hierarchy. So if you want to change something, I try to create a safety zone so there's something they can focus on. So create a safety zone and from the safety zone create a hierarchy of thinking. It could be swimming, the safety zone is breathing under water - something simple for them. And then you create some layers or some hierarchy on top of that. So for me I just make sure that I link that so there might be five hierarchical steps that we want to perform. "You did number one and number two really well today, here's number three." Next time around it's like "okay remember number 3," they do that well. Next session if they've mastered 3, then 4. Six weeks later we've mastered 3 now that's a rather permeable skill, that's going to be incorporated into most things now, so now we can build off that. So you've just got to link it so that you're not throwing new shit at them all the time. And create that hierarchy of thinking. And always come back to their safety zone. Because they might go from 1 to 2 to 3 and master 3 and next week come in and not even be able to put 2 together. That's alright we'll go back to number 0, we'll create the safety zone and we'll rebuild again. (Jackson)

Finally, due to the extremely high goals and expectations that these coaches and athletes share, the coaches are in a position to consistently raise the bar in an attempt to have their athletes do things a little bit better and bring their performance to the next level. However, it is important for coaches to be aware that asking the athletes to do things they are not currently capable of will not enhance competence. Furthermore, Smith, Ntoumanis, and Duda (2007) found that autonomous goal motives predicted the effort athletes put into their sport, which positively predicted goal attainment. Conversely, controlled motives negatively predicted athlete well-being. Two of the coaches stated that performance expectations set by the coach or athlete that were unrealistic is one of the most common psychological barriers to performing well in races. The tasks delegated by the coaches must be difficult, yet manageable:

> Yeah for me the biggest thing for creating self-belief in an athlete is in eye contact, is being able to have a conversation and looking the athlete in the eye and project that where they're heading is in the right place… I'm not big on manipulating sessions to create scenarios where they feel better than they do because at some stage I think that can come back to bite you. But we work in a positive environment, it's not a delusional environment, but the environment I

> create is a positive environment to show them what they can do. We don't talk about what we can't do or we'd like to do. So we create positive – very rarely do athletes walk away from sessions having failed, because with triathlon it's so multifaceted, there's always that can be achieved which keeps that session as a positive session as opposed to a negative session. That's another thing I work really hard on. (Hudson)

By creating an environment in which the athletes feel secure and that there efforts are not viewed as failures, Hudson is helping to maintain the athletes' sense of competence.

Avoid Controlling Behaviours:

There were no obvious signs of overt control implemented by these coaches. The form of control implemented was much subtler and delivered in an autonomy-supportive manner. For example, these coaches would provide examples, tasks, and perspective to athletes in order to create awareness with the intent of leading them down a path in which they will make the best decisions possible. So although they are rarely putting mechanisms in place to prevent a behavior, they are creating an environment in which athletes are choosing to make the right decisions. In addition three of the four coaches stated that they are not against letting athletes learn from their mistakes, so long as it is followed up with perspective and education. Research that has investigated perceived control implemented by the coach, which consequently results in need thwarting on behalf of the athlete, has found higher incidences of athlete ill-being (Bartholomew, Ntoumanis, Ryan, Bosch, & Thogersen-Ntoumani, 2011). Specifically, the study found that higher levels of need thwarting were associated with increased levels of disordered eating, burnout symptoms, and an immunological marker responsive to psychological stress (S-IgA) in athletes.

Rewards were not used by any of these coaches as a way to motivate the athletes.

The expectations are set at such a high level that athletes are expected to bring 100% of their ability each day and therefore it is not a behaviour that needs to be rewarded. Financial rewards are part of an athlete's livelihood, but these are provided by sponsors and race winnings – not coaches.

Finally, when asked about what the best plan of action for an athlete who has not seen improvement for several months, three of the four coaches stated that a coaching change or bringing in extrinsic people (i.e., experts in a given field) to provide the athlete with the help and environment they need. These statements demonstrate that they are not trying to control the athletes or the situation. The priority is always to put the athlete in the best situation to excel.

> …And if they're stale because they've been with me for a long time and they're just sick of me and my voice has just become unbearable, I'll look to send them elsewhere or look to change the stimulus. You do whatever it takes. And I think a lot of coaches don't. I think a lot of coaches will do whatever it takes as long as the athlete stays with them. Whereas from my point of view I will do whatever it takes to get the athlete to change the stimulus. So one athlete I can think of as a good example. Not that she was stale, but I certainly could have flexed my muscles and said no you must be at this training camp. You must come and train with the group. I feel empathy for what's going on with your partner but this is your job. I could have done that but I know that would have pushed her very quickly to a mental staleness or a resentment. You've got to let go sometimes. And part of that process is the question of independence and knowing that they've been empowered to operate – they're never going to operate at the same level but they can operate at a high level without you. And a lot of coaches are threatened by that because the fear is if it works out they can operate quite well without me, they're going to leave me. Maybe they will. But if you're in an athlete-centered program – I've never had an athlete leave me because I'm doing a good job, there's something I'm doing wrong. Athletes don't tend to walk out the door. You've got to have done something wrong. So that is the long answer to that. I'm watching all the time so they don't become stale, we change the stimulus a lot, I mix things up a lot. (Hudson)

Suggesting to an athlete that they change programs to obtain a new stimulus when they have not seen improvement for some time, as Hudson has done, is one of the finest examples of avoiding controlling behaviours over his athletes. Hudson is not saying this

because he no longer wants to work with the athlete, but rather it's quite the opposite - he cares more about the athlete than himself.

Prevent ego-involvement in athletes

Of the seven tenets of autonomy-supportive coaching, the role of competition in practice generated the most diverse responses among the coaches. Like most sports, triathlon is a very competitive sport. Measuring success is much more dependent on the finishing position, which is in contrast to sports such as track and swimming where personal best times are also important (triathlon courses and conditions have a high level of variability and therefore time is much less important). Therefore in order to get the most of an athlete, competition must be practiced with intent just like any other skill:

> … some people don't like being chased so you get them chased. Some people don't like chasing, so you make them chase. So yeah you are manipulating circumstances to the best of your ability to achieve a very specific competitive result, which you're trying to get them to [achieve] in competition. I had a situation where some of them disagreed with certain things on the bike, the next session you force them to do that. You are striving to get the athlete to be as developed as completely as they can possibly be. Tim Noakes did some interesting research through Peter Kirsten who coached the Indian Cricket Team and I learned a lot from this. It's why a lot of juniors don't transition well to senior athletes is because they're so good as juniors that their coaches protect them and keep them away from the areas where they are weak. And so they never get an opportunity to develop as all around athletes. And when they eventually get into an environment where their skill is matched by everybody else on the team, they've not sufficiently figured out their weaknesses. So they have this weakness that is exposed. (Maddox)

Each of the coaches believe that an athlete's self-improvement is the most important priority, however two of the coaches had contrasting views on the value of competition in practice to help an athlete achieve their greatest self-improvement. Coach Franklin held the belief that all the members of his group are striving for a similar purpose and therefore they must work together to best achieve their goals. Rarely does he see them competing against each other in practice and under certain circumstances he will

separate athletes to prevent competition:

> So yes, the answer is focus on self-improvement and there is cohesion with us being together, of cooperation and working together, of sharing the load is really important and it helps. But we've got to make sure that everyone is improving… Everyone feeds off each other's success and equally when someone is struggling that affects everyone too within those environments. So it has to be about the individual and about their performance. It's not competition so much within the group. Again I don't see them as racing each other within the group, but in supporting what the objectives are. So if we have something as simple as a basic ride that has certain parameters and we're just making sure that we are helping each other achieve that, so we individually and collectively they can help each other. Or a really specific bike session where we're doing a pace line or group efforts where we need each other to achieve what they want, to achieve the variability or achieve the changes in pace, the efforts that you want to achieve. So that's not so much a competition, but a synergy in wanting to achieve the same things. And we believe collectively that we're stronger in doing that together… We want to compete with the best in the world and have the environment that allows that to happen and collectively we do that. (Franklin)

Coach Franklin's philosophy is in alignment with the findings of Pensgaard and Roberts (2002), in which they found a task-involving (i.e., self-referenced standards and skill improvement) climate created by the coach enhances self-determined motivation compared with an ego-involving climate (i.e., comparing oneself to others). However, Coach Jackson believes that there is value in providing controlled competition within the group as opposed to having the individual focusing solely on self-referenced standards:

> Yeah it's a balance of both. So again it's providing, it's creating the scenario. Everybody here understands that we're not a team, so we don't play this team shit. We're a group of individuals who happen to be together in a group environment. There's no team. It's clearly established that one man or one woman's success is another woman or man's failure. I mean they'll celebrate somebody's great performance but that's a performance that's taken from them. So yeah, all competing against each other. It's a matter of controlling the competition. When you've got very clear individual outcomes of one or two it's about setting an environment or setting a time where they understand competition is off the table and vice versa there are times you flip the switch and you let them clearly know competition is what it's all about. And as a coach you control that by your presence and your actions. It's pretty easy. You set the structure, you set the time and you stand for what you want every day it's pretty easy to get what you want because if you stand for it you'll get it. If you don't stand for it athletes will be wondering what you're standing for today. So I think a lot of that comes from

> exemplifying and setting a standard, asking for more every day, setting it every day, and holding true for it. And I don't spend much time – if the athletes want to be over competitive, or they want to be overzealous, again osmosis [of the group] will take over. (Jackson)

Finally, Coach Hudson falls within these two view points and also feels there is value in allowing competition in practice, but using it in such a way that the athletes do not feel much additional pressure:

> I'll use competition sparingly and where it has a positive outcome. When I say positive outcome, in my group when we compete we don't have a loser. We have someone who may touch the wall first but there's no room for humiliation or no room for someone overstepping the mark where they're really competing to beat their peers. So the focus is really on the individual, all their programs are individual. There are times when their programs overlap which allow us to compete. But even in competition I'll manipulate the competition where I might have people compete by having a staggered start. Very rarely do they go head to head because very rarely do I have two athletes who are exactly the same where they could go head to head. So I might start a girl 5 seconds ahead of another girl or vice versa… And in making sure in my program no one is – one of the things I don't tolerate at all is that vindictive behaviour when someone comes in and really tries to rub someone else's nose and they overtly go out to smash someone or put them in their place. That's something that I just do not tolerate in any way or form - irrespective of how good they are. There's no room for that. So when it comes down to that, when we go through the values at the start, that's one of the things we speak about - is humility. (Hudson)

A recent meta-analysis found support for mastery-approach goals (i.e., improving upon self-referenced standards) and performance–approach goals (i.e., trying to outperform others) in regards to enhancing performance (Van Yperen, Blaga, & Postmes, 2014). In contrast, mastery-avoidance goals (i.e., avoid incompetence on the basis of self-referenced standards) or performance-avoidance goals (i.e., avoid failure relative to others) negatively affected performance. More specifically a study on recreational triathletes found that those with the high levels of performance-approach goals raced faster than those with high levels of performance-avoidance goals (Stoeber, Uphill, & Hotham, 2009). Similarly, professional golfers with high performance-approach goals

perform better than those with low performance-approach goals. The authors state, "Hence, trying to demonstrate his/her competence to others seems to constitute a powerful source of motivation for elite athletes." (Bois, Sarrazin, Southon, & Boiche, 2009, p. 264). Therefore, it is likely that a combination of mastery-approach goals and performance-approach goals will produce the best performances.

Structure

Due to the fact that these coaches work full-time with 10 – 15 athletes year round, they are able to implement a high degree of structure within their programs. The coach typically sets camp location, practice times, and workout specifics. However, within the structure, Coach Franklin stated that there is autonomy:

> …when I'm in camp here I set the schedule of the basic program and practice times, a lot of that is set. But within the workouts, within the sessions there is a degree of autonomy that we strive for and that's how to do the session on a given day. That's going to be where that comes in, is how they decide to do a particular workout… So yeah there is some autonomy within a structure. Part of the job of the coach is to organize and provide that direction, the guidance of what we're trying to achieve. (Franklin)

Based on the previous quote and others, it became evident that a key feature of providing structure effectively is to do so in an autonomy-supportive way. This is in agreement with Jang, et al. (2010) who found that teachers who provide autonomy within structure had the highest levels of student behavioural engagement. In order for a coach to provide autonomy within structure, they would first look at what they are trying to achieve with an athlete. Based on that information, they would set a structure within the group environment to best achieve those goals, while providing individualization for specific athletes as needed. Finally, they would ask for input from their athletes on the structure set in place. If the athletes suggest a way in which it can be improved or

modified while still achieving the goals that have been set, then the coach should consider modifying the structure. By acting in this way, the coach is able to provide the structure and guidance the athletes are seeking while still providing them choice and a feeling of ownership in the process.

> So I certainly don't run a "my way or the highway" type program. I guess it's an approach which is not formal, it's quite organic. So I'll sit down and go through in blocks of work what we're trying to achieve. And I think the choices that happen in a day-to-day nature are probably lessened depending on how I go about that initial break with every training block and go over again what we're trying to achieve, how we're going to achieve it. And then we have those initial conversations around their input at that stage. And once we nail down that process then the day-to-day choice becomes a little bit less mainly because they've already asked those questions. They're not asking for input or they're not questioning input or not voicing their point of view, but at the same token I think one of the reasons that the athletes gravitate towards me is that they know that at any stage they certainly have a voice and it's not just lip service it's something that I take seriously and they know that each time they've pointed things out and I've looked at it and made changes, like right up until the last minute. So they do have a high degree of say in what they do in the initial stages and they certainly have a voice based on if they can present an argument to me that the way I'm trying to achieve an outcome can be achieved differently or achieved in easier fashion, or it might just be doing it their way on that day, I look at it and think it still falls under the umbrella of what I'm trying to achieve then I certainly consider it. (Hudson)

By providing choice in the initial stages of planning, Coach Hudson is able to build structure around the athletes' desired path. Furthermore, Coach Hudson requires that the athlete provide a rationale for why things should be done differently and therefore there is a large degree of forethought required on behalf of the athlete.

Involvement

Each of these coaches is heavily involved with their athletes' as they are spending 20 – 40 hours per week with each other. Triathlon is unique from other more traditional jobs in that every aspect of an athlete's life can potentially affect their performance. Therefore a coach needs to be informed if an athlete is not sleeping well, having

relationship problems, has specific nutritional needs, etc. This is in contrast to a more traditional job, where a boss or leader may not need to know these specific details of their employees' lives. However, the coaches were clear that there should be a high degree of professionalism in their interactions and that a coach's job is not to be friends with their athletes. Coach Maddox states:

> I think in the past, as a school teacher, you also taught those athletes so you were involved in developing them as individuals in terms of their characteristics and all those other things. But a lot of what I do now is about performance and I take a lot of cognizance and go to a lot of trouble to find out what's going on in their lives. But I have very little to do with that. We definitely don't hang out, we don't do meals together, we don't have social functions together. None of that… So no I think they must be very, very distinct clear boundaries between athlete and coach. (Maddox)

However, the individualized needs of the athlete must be taken into account for them to thrive to the best of their ability and therefore a coach may sometimes need to play a more active role in certain athletes' lives. Coach Hudson exemplified this with his statement:

> And non-training related stuff, I guess I play a role as a mentor. Ideally I try to separate the professional and the personal, but knowing that as a coach you do become a significant individual in the athlete's life and some of them are comfortable to bounce ideas off me, some of them, even when they're in trouble, you can see them in trouble but they choose not to use you. Some of them are very deliberate. Others will throw everything at you whether it's training related, family related. And my role is just to – I certainly don't step into areas that I don't feel comfortable. There'll be times where I'm like "that's way out of my pay grade, you need some professional advice." And obviously my job is to point them in a direction for that. And there's other stuff where, I very rarely give advice, I just recount some of my experiences where I've seen whether it's personal or from other athletes. I'll say I've seen athletes here in the same situations and this is how they handled it. A lot of that I think for the athletes is about recognizing that they're not alone… So very quickly the more opportunities, the more experiences you can pull up to illustrate a similar case – even without giving an answer. Often it's not an answer you're giving it's just that the athletes all of a sudden don't feel isolated. They're not alone. So I try to stay out of a person's life but also acknowledging that sometimes I am the closest significant person who they trust, and they know my interest is doing the best for them and they rely on me. (Hudson)

A key point from the above statement by Coach Hudson is that one role of a coach is to help their athletes feel a sense of relatedness. Explaining to them that there are many other athletes going through the same issues and that it is normal to feel the way they do. Furthermore, a coach should be able to facilitate meetings between their athletes and outside professionals to help them through specific issues. By taking an active role in the athletes' lives, removing the feeling of isolation, and connecting the athletes with other professionals, a coach is helping to fulfill the athletes' need for relatedness. Philippe and Seiler (2006) provided support for this from an athlete's perspective. They interviewed five international swimmers preparing for the 2004 Olympics and found that the swimmers valued their coach's social competence above their ability to provide technical instruction. Philippe and Seiler (2006) suggest that in the context of elite sports, coach education should not only focus on technical, physical, and tactical training, but also communication, listening, and problem-solving with their athletes.

Additional Key Coaching Behaviours:

In addition to the tenets of autonomy support, structure, and involvement there was one other behaviour that was consistently mentioned and that was identified through inductive analysis of the interview data – accountability. These coaches discussed holding the athletes accountable for their behaviours, as well as being accountable for their own behaviours to their athletes. Although further research is needed, this coaching behaviour could potentially be added to the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003).

<u>Creating Accountability</u>

When a coach holds their athletes accountable for their decisions they increase an

athlete's feeling of ownership, which consequently has the ability to enhance their self-determined motivation (Roch & MacNall, 2007). However, a coach must hold an athlete accountable in a non-controlling manner. One of the ways in which a coach can do this is by asking their athletes a series of questions that allows the athlete to view the situation with perspective. If the coach has done this properly, the athlete will make good decisions to rectify the situation and have learned a valuable lesson going forward. It is important that a coach ensures the athlete understands why the behavior is important and why they are being held accountable. Coach Maddox had this to stay about accountability when asked how he would deal with an athlete who had not given their best in a race:

> I don't think I even feel the need to deal with it. Nine times out of ten they know it. And so what I would do is I would hold them accountable – I'd say do you think that was your best effort? Did you play that one to the end? And very quickly they'll say no. And to me it all boils down to the degree of relatedness that you have with that athlete, the relationship that we have with the athlete. So it almost turns out to never needing to have that conversation. You'll walk up to the athlete and the athlete will say I let myself down today. Where I will come down on them like a ton of bricks is when they say to me "I let you down." I will not tolerate that. I'll say, "If that is really the case you're in the sport for all of the wrong reasons. You're not in this sport for your mother, your brother, your uncle, your dad, your mom, your coach, or your country. You're in the sport for yourself…" And everybody benefits if they give it their best shot for intrinsic reasons. They always hold up better under pressure. (Maddox)

Other instances in which the coaches held their athletes accountable included: going to hard on their easy days, completing their daily training logs, performances that were affected by decisions on where to live and train, and not choosing to follow through with the behaviours they had chosen to invest in for optimal performance. Balderson and Sharp (2005) have shown that when students are held accountable for their actions, they are more likely to follow through with those behaviours. However, a study on the accountability practices of youth sub-elite volleyball coaches found that accountability practices were severely lacking (Pereria, Mesquite, Graca, 2009). Although empirical

testing is necessary, coaches' accountability system may be one major difference between amateur and elite coaches.

Coaches must also hold themselves accountable to the athletes for the mistakes they have made in order to build a trusting relationship.

> …very rarely do I ask my athletes to do something that they're not capable of. So it's very well measured – unless there's a really radical circumstance going on they should be able to achieve it. And if they can't I'll own up to it. I'll say "you know what, it's my bad, you're too tired for that session. It was too hard of an objective I set," and I'll own it. And I think that's something that helps build that relationship with the athletes as well. It's taking that responsibility; "hey it's my fault. It's my fault, therefore based on what you did this morning we're going to modify the next session." I'll say to them, "it's my responsibility, it's not yours." And I haven't seen many coaches do that. (Hudson)

When Coach Hudson takes responsibility for his mistakes and identifies them to his athletes he is not only building trust with his athletes, but he is also protecting their competence. An athlete should not feel incompetent due to something that is out of their control such as an inaccurate coaching instruction.

Coach's Personal Orientation, Coaching Context, Perceptions of Athletes' Behavior and Motivation

Initially, I had not intended to examine the first part of the model: coaches personal orientations, coaching context, and perception of athletes' behaviour and motivation because I was focusing on coaches' behaviours as opposed to the factors that lead them to these behaviours. Additionally, I did not want to spread my questions and time to thin as to dilute the attention I could spend on the coaches' behaviours. However, valuable information consistently arose in each of the coaches' responses that pertained to this part of the model. By including this information, it will help to clarify the underlying reasons these coaches behave as they do.

<u>Coach's personal orientation:</u>

Mageau and Vallerand (2003) suggest that a coach's tendency to be either autonomy-supportive or controlling in their behaviour is the result of an attitudinal standpoint that either respects an athlete's need for autonomy (athlete-centered) or values control over athletes, while demanding their respect for authority (coach-centered). Each of the four coaches demonstrated athlete-centered approaches. Although there are differences in how the coaches allow the athletes to go through the learning process, the coaches consistently drew upon their experience, used examples, and asked questions as a means to educate the athletes. By doing this they provide perspective and create awareness for their athletes; when an athlete has perspective and awareness they are able choose the best behavior without the coach having to dictate to them what they would like to happen. When I asked about holding athletes back in workouts to prevent overtraining I received the following responses from Coach Jackson and Maddox:

> Yeah I'm not a not a control freak - like everything under my nose has to happen. For me I'm more than happy for them to learn from experience. So let them go and then talk to them. And the key thing is when you're working with new athletes, you don't want to over impose your structure. You really go back to basics and you go, "so how did you learn this? What do you know about easy aerobic running?" So rather than dictate - you go back "okay what have you been taught, what have you learned?" And then "okay, well I've got some other concepts I'd like you to think about" and then you provide the athlete with the experience of reading or understanding or learning those concepts, and you kind of lead them in the way you'd like them to make a decision based on the information. So often it's not about dictating, it's about providing a learning experience and giving them the tools to make a decision. And they'll probably make a decision as you wish they will, but you've actually led them through a process of learning and they have a lifelong ability to make a decision. [The athlete can then say] "Why do I do that? Because of XY and Z." [Rather than] "Why do I do that – because Coach Jackson insisted I do it." That's not sustainable. The coaches who create decision-making athletes by being remote control coaches or making decisions for them, they never create sustainability. They'll get vast improvement quickly. The coaching environment will look like a department store, revolving front doors, people coming in and going out because they will not be able to sustain [the athletes] not being able to make decisions for themselves. (Jackson)

> I don't like them to learn that lesson from their mistakes because it wastes a lot of time. But I do go to a huge amount of trouble to use anecdotes and examples of athletes who were very successful who figure out too late to slow it down. Could have slowed it down in the beginning… It's an education thing. A good example I have heard is Craig Motram talking to [a professional triathlete] and saying to him "I run 2 minutes faster for 10 K than you do, why are you doing your easy runs faster than I am?" And the same with, there was an athlete here who subsequently got into trouble so I won't use his name, but he was training with Lopez Lomong and Lopez said the same thing. Lopez was about 90 seconds faster than he was for 5K and Lopez asked "what are you doing? Why are you hurting us in long runs to no avail? It's not like you can go any faster by running harder in long runs." So using anecdotes and then just showing them, mostly teaching them that the purpose of the long stuff is connective tissue preparation. The purpose of the long stuff is preparing a template on which the hard work comes, and if you can't do the hard work then I'm going to hold you accountable for going too fast in slow stuff. (Maddox)

Stebbings, Taylor, Spray and Ntoumanis (2012) found that a coach's psychological well-being is a strong positive predictor of the autonomy support they provide their athletes. Therefore, when a coach is in the proper frame of mind they are able to provide their athletes opportunities to make decisions and take ownership in the process. In contrast, coaches' psychological ill-being accounted for 36% of the variance in their controlling behaviours over the athletes. The authors suggest that when coaches have negative emotions and depleted energy, they will be more critical and controlling towards their athletes. Therefore, it is important that a coach's working environment is optimized to ensure a healthy psychological state for their own sake, but also for the autonomy support it will allow them to deliver to their athletes.

Coaching context

Coaching context refers to the specific characteristics of the situation in which the coach is operating within. For example, the context for a recreational triathlon coach would be focused on teaching the basics of the sport, emphasizing enjoyment and health, and would generally be a low pressure environment. In contrast, the context for an elite

triathlon coach would be focused on teaching advanced skills, operating with a high level of precision and professionalism, and would involve a much higher degree of pressure. The coaches of this study work in a highly specific context due to the athletes they are working with and the goals they share with those athletes. Therefore these coaches' values, behaviours, and expectations are directed towards producing athletes capable of winning Olympic and World Championship medals. The term "context" appeared 17 times in the coaches' responses in regards to their situation or the situation in which they are working with the athletes. Mageau and Vallerand (2003) suggest that when a coach is put in a context in which they have external pressures to produce a certain result, higher levels of stress are created leading to more controlling behaviours. Certainly these coaches do experience a high level of pressure from either their federations or the athletes they coach. Federations can fire a coach, or athletes can leave the program if they are not satisfied with the results they are obtaining. However, the coaches' behavior did not appear to be affected by this pressure – at least not in the sense of taking additional control over the athletes as Mageau and Vallerand (2003) had suggested it would. When asked about key behaviours that make him successful as an elite triathlon coach, Coach Hudson stated:

> Behaviours. I think I'm consistent, I think that consistency manifests in being quite stable. Like one of the things I work on with the athletes now is that I'm a bit of a foundation. So if things are going bad I'm pretty stable. I don't panic. I'm the one who always seems to be in the middle. On a Monday morning after race day if an athlete wins I'm no better. If an athlete loses, I'm no less of a person. A lot of people attach who they are to what they do. But coaching is what I do, it's not who I am. I run this no benefit - no loss mentality with coaching, and I think the athletes realize that irrespective of what's going on. I work very hard. There are times when I'm emotional. I think it's a responsibility of the job. But I find it easy – it doesn't matter what's going on, it's never about me. It's about the athlete. So if I find myself getting emotional, I realize that it's becoming about me and not the athletes. And I make sure I bring myself back… So that stability and

> that consistency and behaviour. When I get up I'm neither manically happy in the morning, nor manically depressed. I think the athletes know that I'm there and I'm going to be stable. (Hudson)

Similarly, Coach Franklin had a similar response regarding the highs and lows of coaching:

> I try to be pretty neutral; I don't get too excited when things are great or too negative when things are down. I suppose it's part of the job of a coach to be objective, have some distance from things and not be emotional so not to get drawn in, like if something isn't going well to get negative about it because most of them don't need any help being more negative in those situations. They need somebody to give them perspective. And vice versa, praise and that. (Franklin)

These coaches recognize that implementing more control does not make the situation better and therefore they resist the temptation. Having this discipline is likely a skill that has been developed over several years of elite coaching. Therefore, regardless of the pressure and stress they are experiencing, these coaches are not allowing the situation to be about themselves and therefore will continue to act in an autonomy-supportive way for the betterment of the athlete.

Perception of athletes' behavior and motivation

The coaches' perception of their athletes' needs, which directly influences their motivation and subsequent behavior, was the most consistent theme among the coaches' responses. Due to the relatively small number of athletes the coaches were working with (<15) they were able to fully customize not only the training plans to meets the athletes needs, but also the communication style, feedback, degree of autonomy, support, and involvement. This theme was so consistent that it is impossible to state that there is any one correct way to coach, except to say that a coach must act in such a way that optimizes the needs of each individual athlete to the best of their ability. When Coach Franklin was asked about the individual needs his athletes have in terms of choice, he stated:

> So do I provide more choice to some than others? I suppose it's how much choice do they seem to require to perform at their best, or desire or need. And it's different. Some are lead me, tell me what to do and I'll do it and some really need to have that partnership and feel that they're really equal partner in the process. And it's not always with performance or abilities. You could say oh well the top athletes might desire or want that but sometimes developing athletes, in order to feel connected and ownership with what they're doing they need a level of autonomy. So it probably has as much to do with personality, not necessarily ability or talent. (Franklin)

Mageau and Vallerand (2003) created this element of the model to account for the individual differences of athletes. Not only did the coaches of the current study emphasize a high degree of individualization in regards to an athlete's psychological needs, this trend was also consistent with elite Australian coaches from a variety of sports when interviewed about the psychological strategies they use in helping their athletes' return from an injury (Podlog & Dionigi, 2010). Mageau and Vallerand (2003), also suggest that when coaches feel an athlete is going to perform poorly, they are more likely to implement controlling strategies, which decreases an athlete's intrinsic and self-determined motivation. However this was not supported by the coaches' responses. In particular, when Coach Jackson was asked about taking control when he believes the athlete is making poor decisions, he stated:

> I'll always assign tasks and I'm very mindful when I give a task - I call it a betterment task. So if it's a decision the athlete's been making and I don't think it's for their betterment, I'll create a task or experiences that I want them to make decisions on that are for their betterment. So I'll just flip it around that way. So I create betterment tasks and hope that they take ownership of those. I'll provide them with a scenario or an experience that should overpower those bad decisions. I don't like to dictate, I like the athletes to make a decision. (Jackson)

Part 2: Athlete Questionnaires

I received athlete questionnaires from athletes of two of the three groups, however, not all of the athletes from the groups responded. Therefore, the quantitative data is limited and will be used not as a means to generalize claims but as evidence to

support or contrast the coaches' statements as represented in the interviews.

The first questionnaire the athletes completed was the Basic Needs Satisfaction in Sports Scale. All questions were answered on a 7-point Likert scale ranging from "1: not true at all" to "7: very true".

Both groups scored high in the satisfaction of all three needs, which supports the coaches' statements in that they are acting in autonomy-supportive ways while also providing structure and involvement. Although the range of responses were similar across most athletes, there was one athlete in each group that rated their degree of choice as moderate (3.25 and 3.00), with the other athletes reporting levels of choice as high as 6.25. This further demonstrates the need for individualized coaching strategies to optimize the fulfillment of athletes' needs. All other items had individual responses ranging between 5.0 and 7.0. The athletes reported a high degree of volition indicating that they were satisfied with their choice to pursue triathlon at the highest level. This is in accordance with the coaches' behaviour in that they did not implement control over the athletes or make them feel guilty for not wanting to participate in the sport. Coach Jackson demonstrates this by providing choice and honest feedback to one of his athletes in regards to their decision to stay within the training group:

> You've got to create an edge in your environment so athletes buy into it. And I don't have an issue with athletes wanting to migrate in and out. I'll let them try it. We struggled to get [a certain athlete] to buy into coming into the environment. So the first thing you do is ask the athlete for a buy-in for 3 months then they can go home. So, come in, research, discover, buy-in, come away, research, discover then they can go home, have a retreat and think about it. Then I would ask "Now do you want to go home?" She goes "I need to stay here or I'm going to lose." I said "yeah you are going to lose, you are going to lose momentum." How's she going to keep things rolling while she's at home. She's not. She can't. And if she could she doesn't need to be here. So regression does occur so therefore in the future they know if you want to move forward, going home to a non-coached environment without support, regression is going to occur. (Jackson)

Table 3-1. Basic Needs Satisfaction in Sports Scale

Athlete Group	n	Item	M	Range
Hudson/Maddox	4			
		Competence	5.70	(5.20 - 6.20)
		Choice	5.31	(3.25 - 6.25)
		IPOC	6.25	(5.33 - 7.00)
		Volition	6.67	(6.33 - 7.00)
		Relatedness	5.80	(5.00 - 6.80)
Jackson	2			
		Competence	5.50	(5.40 - 5.60)
		Choice	4.50	(3.00 - 6.00)
		IPOC	6.33	(6.00 - 6.67)
		Volition	6.67	(6.67 - 6.67)
		Relatedness	6.30	(6.00 - 6.60)

*IPOC: internal perceived locus of causality

The second questionnaire the athletes completed was the Sports Motivation Scale II, which measures an athlete's motivational profile over a range, from intrinsic motivation to amotivation (Pelletier et al., 2013). In both groups the athletes' motivational profiles showed similar trends of high degrees of intrinsic and self-determined extrinsic motivation and low degrees of non-self-determined motivation and amotivation. This is in accordance with what the SDT would predict for optimal performance (Deci & Ryan, 2008). The motivational profiles of these athletes are consistent with competitive French athletes in a variety of sports (Gillet & Rosnet, 2008). Finally, due to the fact that the coaches did not use rewards, punishment, or guilt as a means of motivating their athletes, both groups scored low on external motivation.

Table 3-2. Sports Motivation Scale II

Athlete Group	n	Scale	M	Range
Hudson/Maddox	4			

		Intrinsic	6.25	(6.00 - 6.67)
		Integrated	5.75	(5.33 - 6.67)
		Identified	5.92	(5.67 - 6.33)
		Introjected	4.25	(3.00 - 5.33)
		External	2.50	(2.00 - 3.33)
		Amotivated	2.92	(2.00 – 4.00)
Jackson	2			
		Intrinsic	5.83	(5.67 - 6.00)
		Integrated	4.33	(4.33 - 4.33)
		Identified	5.83	(5.67 - 6.00)
		Introjected	2.00	(2.00 - 2.00)
		External	2.17	(2.00 - 2.33)
		Amotivated	1.83	(1.67 – 2.00)

The third questionnaire the athletes completed was the Sports Climate Questionnaire, which measures the degree of perceived autonomy support athletes receive from their coaches (Deci, 2001). Based on my own experience and from what I observed with these groups, there are two potential factors that can influence the way in which an athlete responds to these questions. First, number of years with a coach – a longer relationship would likely result in more autonomy as the coach and athlete develop a trusting relationship. Second, perceived rank among the group - an athlete with a higher rank within the group will likely feel more comfortable voicing their thoughts and asking for options. Furthermore, an athletes' personality will also affect the level of autonomy support required; certain athletes will expect much higher levels of choice than other athletes even when they are treated the same way.

Hudson/Maddox's athletes scored relatively high in perceived autonomy support. Jackson's athletes had lower scores, but due to the small sample size it is difficult to too determine if his other athletes would also have reported moderate levels of perceived autonomy support or if the athlete who reported 4.00 was an isolated case.

Table 3-3. The Sport Climate Questionnaire

Athlete Group	n	M	Range
Hudson/Maddox	4	5.96	(5.17 – 6.67)
Jackson	2	4.50	(4.00 – 5.00)

Chapter 4: Conclusions

The current study provided several key insights into the beliefs and behaviours of elite ITU triathlon coaches in regards to creating an environment that optimizes athlete motivation. Several of these beliefs and behaviours were in accordance with Mageau and Vallerand's (2003) Motivational Model of the Coach-Athlete Relationship. Specifically, each of the seven tenets of autonomy-supportive coaching, along with structure and involvement were considered important aspects of their coaching behaviour. The coaches varied in some degree on how they went about implementing these behaviours, but mainly they were driven by two things: individualization to meet the athletes' needs and personality, and core values in which the coaches held and shared with their athletes. These were two themes the coaches consistently drew upon when discussing their beliefs and behaviours.

Mageau and Vallerand (2003) state that three major factors will directly influence whether a coach exhibits predominantly autonomy-supportive or controlling behaviours: coaches' personal orientation, coaching context, and perception of athlete behaviour and motivation. Despite the coaches' natural tendencies, the pressure they feel, or their perception of their athletes' behaviour, they have chosen strategies other than overt control to direct an athlete in the direction they feel is best. These strategies included:

1) Providing their athletes with examples of previously successful athletes in similar situations
2) Providing their athletes with options and the likely consequences that will follow based on their coaching experience

3) Taking the athlete aside and asking them step-by-step questions to take the emotion out of the situation and provide the athlete with context and perspective
4) Provide the athlete with tasks or experiences that will enhance their awareness of the situation.

All of these strategies help to provide the athlete with the best information possible so they are in the correct frame of mind to make good decisions. The ability to refrain from using controlling strategies and opt instead for autonomy-supportive strategies is likely one major reason these coaches have become so successful. Like any other coaching skill, the ability to use these strategies can be learned and should be practiced.

> When I started coaching I probably wanted, and it was an insecurity, I wanted a lot more control than what I do now. And that relinquished over time where I realized that that wasn't the right way, from my point, to go about it. (Hudson)

This is the first study that has examined the similarities and differences between the Motivational Model of the Coach-Athlete Relationship (Mageau & Vallerand, 2003) and elite coaches' beliefs and practices as they pertain to athlete motivation. By and large, these coaches had many similar beliefs and practices in accordance with the model. Mageau and Vallerand's model is the culmination of several studies examining certain aspects of coaching/teaching behaviour (e.g., structure, choice, rationale, etc.) but not all of these behaviours within one individual. Thus this study adds real-world application to the theoretical model. Furthermore, this study adds to the much-needed research specific to triathlons. With triathlon being a relatively new sport, and one that is unique in that combines three sports into one, it is important that research continues to emerge to guide coaches in the right direction. In regards to the methodology, although the quantitative component did not turn out as well as I had intended, the rationale to examine both the coaches and their athletes had a strong rationale and future studies in this area should

consider utilizing a mixed methods approach to obtain the most comprehensive picture possible.

Limitations

Although there were several valuable findings from this study, it is important to note the limitations. First, the sample size of coaches and athletes was small due to the highly specific context in which this study was conducted. Although these coaches are working with some of the best triathletes in the world and there were several similarities between them, it is not to say that other coaching styles would be ineffective or potentially produce better results. Furthermore, had more athletes completed the questionnaires, specifically the ones that had won medals at World Championships and/or Olympics, the motivational profiles may have been different. Second, due to the specific context of the study, it is difficult to extrapolate the findings to other settings such as recreational sports (individual or team) or team sports (recreational or elite). These results will be most valuable to coaches working with elite athletes in individual sports. Third, Smoll and Smith (2006) found that inconsistencies could arise between coaches' perceived and actual behaviour, indicating a lack of self-awareness. Finally, although a coach is a significant contributor to an athlete's motivational profile, there are other factors that can affect athlete motivation such as an their age, gender, and locality (Chin, Khoo, & Low, 2012).

Future Research

Given the limited qualitative research examining elite coaching philosophies and behaviours in regards to athlete motivation, there are several suggestions for future research. Elite triathlon coach observation would be a logical next step in this line of

research. Documenting actual strategies and behaviours as opposed to having the coach solely discuss his/her philosophies and perceived behaviour would add another element of trustworthiness to this research.

Comparing and contrasting elite triathlon coaches with coaches from other more traditional individual sports such as track, cycling, and swimming would also provide valuable information in that the single sports have a long history of coaching tradition which may impact coaching behaviour. Going one step further and comparing and contrasting elite triathlon coaches to elite coaches from team sports would also likely reveal differences in the strategies used by coaches to create and optimal environment for athletes to thrive.

Finally, examining elite coaches' beliefs and behaviours on the best practices to motivate athletes of varying age and gender. This would provide specific details regarding the strategies used to optimize communication with each type of athlete. At the elite level, it is often the minor differences in behaviour that add up to have major effects on performance.

Overall Experience

Throughout this study process I have been highly motivated to learn as much as possible from these coaches to enhance my own abilities as a coach and athlete. I feel fortunate to have gained years of experience in the span of a few weeks through the interviews and time I spent with the groups. This experience has demonstrated to me that in order to be a world-class coach, it is essential to develop the skill set to connect with the athletes and understand what exactly it is they need for optimal performance. This is an area that coaches should give ample consideration in the planning stages of their

program. The coaches I interviewed value the psychology of the athlete as much as they do the physiology. The terms and behaviours that made the most impact on my own coaching and lifestyle are: (a) “Investment” - we must invest our energy and resources into the behaviours that are going to allow us to accomplish our goals. Investing in behaviours that do not bring us closer to our goals is wasteful and detrimental to performance. (b) “Subtle progressions” - the rate at which an athlete develops must occur along a timeline of subtle progressions rather than overzealous leaps to the next level. (c) “Providing perspective” - one of the major roles of a coach is to help their athletes view the situation with a long-term approach and not get bogged down with the short-term results, as well as understand the peripheral influences that may have impacted the situation. (d) “Professionalism/initiative” - these coaches exhibit a high degree of professionalism and initiative. They did not get to where they are out of chance, luck, or by just letting things happen, but rather they seized opportunities and created them when they didn’t exist. I am forever grateful to these coaches for taking the time to share and provide insight into their own lives and the path they have taken in becoming among the world’s best triathlon coaches.

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Appendices

Appendix A: **Interview Guide**

1. Provide choice within specific rules and limits

Main question: Would you consider yourself an autocratic coach or democratic coach? Why? Can you give some examples of how you are autocratic/democratic?

Probe:

- Workout structure
- Pace
- Practice times / location
- Race schedule

Follow-up: Are there certain types of athletes you give more choice too? If so, what types of athletes are these?

Main question: Do you feel your athletes would have less respect for your knowledge and expertise if you gave them more choice in their training?

2. Provide a rationale for tasks and limits

Main question: Do you have team rules (behaviors within training or outside of training)? What are some examples?

Follow-up: Have you explained why you have them? How did they respond to your explanation? Was there any room for negotiation or compromise? Why?

Main Question: Having several highly motivated athletes in your group, How regularly do you have to set limits on how fast athletes can go in practice? Essentially do you find yourself holding them back more, or encouraging them to go faster?

- Do you make exceptions?
- How do you deal with athletes that continually exceed these limits? Updront or let them learn from their mistakes

Main Question: How important do you feel it is to explain to athletes why they are doing certain workouts? How often will you do this?

3. Acknowledge the other person's feelings and perspectives

Main question: How often do you discuss with your athletes how they are feeling about:

- Energy levels and recovery from workouts?
- Structure of their training and workouts (types of workouts)?
- give examples daily, multiple times throughout workout, weekly
- What have they done in their personal life to cause fatigue

Main question: Do you find certain athletes try to impress you in practice at the cost of race performance? How do you deal with that? Essentially the athletes that always trying to prove something. Workout athletes.

4. Provide athletes with opportunities for initiative taking and independent work

Main question: Going into a race, how structured is your race plan? Explain?

Follow-up: Who decides what that plan will be?

Main question: How do you feel when an athlete comes to you with a new training idea they want to implement?

Main Question: How do you develop the independent decision making skills of Olympic athletes?

Probe: Is there certain ways you challenge them in workouts? Can you give an example? Going beyond just training them physically, but challenging them mentally aswell? Push through the mental pain? Give example… phelps

5. Provide non-controlling competence feedback

Main question: In regards to providing feedback, how regularly do you give such things as:

- Praise?
- Positive feedback?
- Constructive criticism?
- Negative feedback (pointing out their mistakes)?

Follow-up: Is this consistent for all athletes or would you say you are harder on some athletes than others in an attempt to motivate them? Can you give an example?

Main question: What kind of talk do you give to your athletes before a race? Do you focus on motivating/inspiring them?

6. Avoid controlling behaviors

Avoid overt control
Avoid criticism and controlling statements
Avoid tangible rewards for interesting tasks

Main question: With this being an elite squad, have you ever had to suggest to an athlete that if their performance doesn't pick up they will have to leave the team? How do athletes respond to that?

Main question: Do you ever try to control an athletes behavior (in training or outside of training) knowing that it's for their own good (i.e., to enhance performance)? Can you give an example?

Main question: How much do you discuss and focus on financial rewards for your athletes:

- Race winning
- Sponsorship
- National cards

Main question: How do you deal with an athlete when you feel they have not given their best effort in a workout or race?

7. Prevent ego-involvement in athletes

Main question: With so many elite athletes training together, do you focus more on an athlete's self-improvement or allow competition within the group, or both? What is the value in taking this approach?

Follow-up: Do you feel the athletes have the same perspective?

Follow-up: Does the focus on competition among athletes change based on the time of year (e.g., as you get close to championship races)?

Structure

Main question: How do you deal with an athlete who continually:

- Exceeds the prescribed pace time?
- Late for practice?
- Trains more than your prescribe?
- Doesn't get along with teammates?

Main question: To what extend does your job depend on the performance of the athletes?

Follow-up: How does this affect the level of control you implement in training/racing?

Involvement

Main question: What type of relationship do you have with your athletes? How involved are you in their lives outside of training?

Probe: How do you go about developing this relationship?

Main question: Do you sit down with each of your athletes at the end of the season and discuss what went well/ what didn't, and what they liked and didn't like about their training?

Main question: Can you discuss the roll of having teammates to train with on a daily basis and how this affects athlete motivation/success? Do some athletes train better by themselves

Main question: What is the value in having a social life outside of training for longevity in this sport?

Additional (if time permits):

What types of things do you do to motivate your athletes on a daily basis?

What are the key psychological traits you look strive to develop most in your athletes?

From your experience, do you have any athletes on your team having competitive anxiety issues? Internet... keep off.

What are the main reasons that make you so successful in coaching elite triathletes?

What experiences would you like to share with other coaches? Add for developing coaches… coaches in their early stages.

Appendix B: Athlete Questionnaires

Athlete Questionnaire #1

Instructions: Please respond to the items below in regards to your feelings and experiences towards your sport. Using the 1 - 7 scale, indicate the extent to which you agree with these statements by circling or highlighting one number for each statement. Your responses are confidential. Please be honest and candid.

		Not true at all						Very True
		1	2	3	4	5	6	7
1	I can overcome challenges in my sport.	1	2	3	4	5	6	7
2	I am skilled at my sport.	1	2	3	4	5	6	7
3	I feel I am good at my sport.	1	2	3	4	5	6	7
4	I get opportunities to feel that I am good at my sport.	1	2	3	4	5	6	7
5	I have the ability to perform well in my sport.	1	2	3	4	5	6	7
6	In my sport, I get opportunities to make choices.	1	2	3	4	5	6	7
7	In my sport, I have a say in how things are done.	1	2	3	4	5	6	7
8	In my sport, I can take part in the decision-making process.	1	2	3	4	5	6	7
9	In my sport, I get opportunities to make decisions.	1	2	3	4	5	6	7
10	In my sport, I feel I am pursuing goals that are my own.	1	2	3	4	5	6	7
11	In my sport, I really have a sense of wanting to be there.	1	2	3	4	5	6	7
12	In my sport, I feel I am doing what I want to be doing.	1	2	3	4	5	6	7
13	I feel I participate in my sport willingly.	1	2	3	4	5	6	7
14	In my sport, I feel that I am being forced to do things that I don't want to do.	1	2	3	4	5	6	7
15	I choose to participate in my sport according to my own free will.	1	2	3	4	5	6	7
16	In my sport, I feel close to other people.	1	2	3	4	5	6	7
17	I show concern for others in my sport.	1	2	3	4	5	6	7
18	There are people in my sport who care about me.	1	2	3	4	5	6	7
19	In my sport, there are people who I can trust.	1	2	3	4	5	6	7

20	I have close relationships with people in my sport.	1	2	3	4	5	6	7

Athlete Questionnaire #2

Instructions: Please indicate to what extent each of the following items corresponds to one of the reasons for which you are presently practicing your sport. Using the 1 - 7 scale, indicate the extent to which you agree with these statements by circling or highlighting one number for each statement. Your responses are confidential. Please be honest and candid.

Not true at all						Very True
1	2	3	4	5	6	7

1.	Because it gives me pleasure to learn more about my sport.	1	2	3	4	5	6	7
2.	Because it is very interesting to learn how I can improve.	1	2	3	4	5	6	7
3.	Because I find it enjoyable to find new performance strategies.	1	2	3	4	5	6	7
4.	Because practicing sports reflects the essence of whom I am.	1	2	3	4	5	6	7
5.	Because through sport I am living in line with my deepest principles.	1	2	3	4	5	6	7
6.	Because participating in sports in an integral part of my life.	1	2	3	4	5	6	7
7.	Because it is one of the best ways I have chosen to develop other aspects of myself.	1	2	3	4	5	6	7
8.	Because I have chosen this sport as a way to develop myself.	1	2	3	4	5	6	7
9.	Because I found it is a good way to develop aspects of myself that I value.	1	2	3	4	5	6	7
10.	Because I would feel bad about myself if I did not take the time to do it.	1	2	3	4	5	6	7
11.	Because I feel better about myself when I do.	1	2	3	4	5	6	7
12.	Because I would not feel worthwhile if I did not.	1	2	3	4	5	6	7
13.	Because people I care about would be upset with me if I did not.	1	2	3	4	5	6	7
14.	Because people around me reward me when I do.	1	2	3	4	5	6	7
15.	Because I think others would disapprove							

	of me if I did not.	1	2	3	4	5	6	7
16.	I used to have good reasons for doing sports, but now I am asking myself if I should continue.	1	2	3	4	5	6	7
17.	I don't know anymore; I have the impression that I am incapable of succeeding in this sport.	1	2	3	4	5	6	7
18.	It is not clear to me anymore; I don't really think my place is in sport.	1	2	3	4	5	6	7

Athlete Questionnaire #3

Instructions: This questionnaire contains items that are related to your experience with your coach. Coaches have different styles in dealing with athletes, and we would like to know more about how you have felt about your encounters with your coach. Using the 1 - 7 scale, indicate the extent to which you agree with these statements by circling or highlighting one number for each statement. Your responses are confidential. Please be honest and candid.

Not true at all — Very True

1	2	3	4	5	6	7

1.	I feel that my coach provides me choices and options.	1	2	3	4	5	6	7
2.	I feel understood by my coach.	1	2	3	4	5	6	7
3.	My coach conveyed confidence in my ability to do well at athletics.	1	2	3	4	5	6	7
4.	My coach encouraged me to ask questions.	1	2	3	4	5	6	7
5.	My coach listens to how I would like to do things.	1	2	3	4	5	6	7
6.	My coach tries to understand how I see things before suggesting a new way to do things.	1	2	3	4	5	6	7